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What's in a name? Investors' reactions to non-GAAP labels

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What's in a name? Investors' reactions to non-GAAP labels

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Dedication

To the incredible community at The University of Texas, for never doubting me and for providing me with all of the tools I needed to succeed. Hook ‘em!

To my parents, for always encouraging me to aim high, and for showing me what hard work looks like.

And,

To Steve, I wouldn’t have made it through the last five years without you, and I can’t wait to see where the rest of our journey takes us.

“Shoot for the moon. Even if you miss, you’ll land among the stars.”

– Norman Vincent Peale

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What's in a Name? Investors' Reactions to Non-GAAP Labels

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Many firms report non-GAAP measures, and there is considerable variation in how firms label these measures. I conduct a survey and two experiments to investigate how non-professional investors perceive non-GAAP labels used in practice, how two commonly-used non-GAAP labels affect non-professional investors' judgments, and the moderating effects of awareness of managerial discretion in non-GAAP reporting. I find that when awareness of discretion in non-GAAP reporting is low, investors are more willing to invest in a firm that reports higher non-GAAP earnings with a more diagnostic label, specifically a label that implies persistent performance ("core"), compared to when the firm uses a less diagnostic non-GAAP label ("adjusted"), even though the non-GAAP earnings are not more persistent than GAAP earnings. Results further suggest that when awareness of discretion is low, investors rely primarily on the diagnosticity of the non-GAAP label in valuing the firm, causing them to overlook additional non-GAAP information. However, the opposite is true when awareness of discretion in non-GAAP reporting is high: investors are *less* willing to invest in a firm that reports higher non-GAAP earnings with a label that implies persistent performance because they perceive non-GAAP reporting to be less transparent, and therefore management to be less credible, when using a label that does not match the underlying calculation (i.e., using a label that implies persistence when non-GAAP earnings are not persistent). Additional results suggest non-professional investors value increased

transparency in non-GAAP reporting, be it via the non-GAAP label or other features of the non-GAAP disclosure such as the placement of the non-GAAP reconciliation.

Table of Contents

List of Tables……...……x

List of Figures…….……xi

Chapter 1: Introduction……..1

Chapter 2: Institutional History and Current Practice ……13

2.1 Non-GAAP Regulatory History…….13

2.2 Research on Non-GAAP Reporting……15

2.3 Non-GAAP Labels in Practice…..……..….18

Chapter 3: Theory…….21

3.1 Elaboration Likelihood Model…..……..….21

3.2 Theoretical Model……...…..……...….23

Chapter 4: Hypothesis Development……25

4.1 Hypothesis One – Reconciliation Access……25

4.2 Hypothesis Two – Willingness to Invest…….27

4.3 Applying the Theoretical Model……...…….30

Chapter 5: Experiment One…..……..31

5.1 Design, Procedures and Participants…..……..…31

5.2 Dependent Measures…..……..……34

5.3 Manipulation Check……..……..35

5.4 Reconciliation Access……..……..….36

5.5 Willingness to Invest……..37

5.6 A Note on Measurement-of-Mediation……..38

5.7 Supplemental Analysis – Theoretical Model …….……40

5.8 Supplemental Analysis – High Awareness of Managerial Discretion ……42

Chapter 6: Experiment Two……..45

6.1 Design, Procedures and Participants…..……...…45

6.2 Results ……..…..……47

Chapter 7: Conclusion……..50

Figures and Tables…….……...53

Appendix A: Non-GAAP Label Examples…..……..65

Appendix B: SEC Comment Letter Examples…….…….66

Appendix C: Experimental Materials……..…..……67

References……..132

Vita……...……..138

List of Tables

Table 1: Frequency and Perceived Persistence of Non-GAAP Labels in Practice……..59

Table 2: Experiment 1: Predictions and Results……..60

Table 3: Experiment 1: Access Supplementary Information ……..61

Table 4: Experiment 1: Willingness to Invest……..……62

Table 5: Experiment 1: Process Measures……63

Table 6: Experiment 2: Willingness to Invest……..…….64

List of Figures

Figure 1: Non-GAAP in Practice…….53

Figure 2: Theoretical Model..……...55

Figure 3: Graphed Predictions and Results……..56

Figure 4: Experiment 1: Statistical Process Model…..……..57

Figure 5: Experiment 2: Primary Dependent Measures Graphed Results...…….58

Chapter 1

Introduction

A non-GAAP metric is one that either includes or excludes amounts that the most directly comparable number presented under US GAAP does not (SEC, 2003). Almost all large firms consistently report non-GAAP metrics: 97% of the S&P 500 presented at least one non-GAAP metric in 2017 (Usvyatsky and Coleman, 2018). Further, firms use a variety of terms to label the non-GAAP metrics they report, such as "core" or "adjusted" income (see Appendix A for examples). In this study, I first provide descriptive evidence on the variation in how firms label their non-GAAP earnings metrics and conduct a survey to examine how non-professional investors perceive these labels. Building on these results, I conduct two experiments to test how the diagnosticity of non-GAAP labels and investors' awareness of managerial discretion interact to affect information acquisition and willingness to invest.

It is important to understand how non-GAAP labels affect non-professional investors' information acquisition and investment decisions. There is substantial managerial discretion involved in non-GAAP reporting; as a result, the Securities and Exchange Commission (SEC) is concerned about the potential for non-GAAP reporting to cause confusion among investors. One issue of specific concern is the mislabeling of non-GAAP metrics (Rapoport, 2013). This concern is apparent in numerous SEC comment letters in which the SEC requests firms use non-GAAP labels that more accurately reflect the way in which the measure is calculated. For example, a letter to Dime Community Bancshares requests the company not use the "core" label "in light of the fact that most of

the adjustments [the firm is] making to exclude from core earnings are directly related to the on-going operations of a bank" (SEC and Vaughn, 2010; see Appendix B for more examples). In my study, I examine how investors react to the diagnosticity of non-GAAP labels, which I define as the extent to which the label conveys characteristics of the measure beyond the fact that it differs from GAAP. Because my study is the first to examine how investors react to non-GAAP labels, I am able to provide regulators important evidence on the validity of their concerns regarding the mislabeling of non-GAAP metrics. My findings about investors' reliance on diagnostic labels also have broader implications for those seeking to understand how the language used in financial reporting can affect investors' information search and decision-making processes.

It is also important to understand if and how investors' awareness of managerial discretion in non-GAAP reporting influences their reactions to non-GAAP disclosures, including non-GAAP labels. Awareness of discretion in non-GAAP reporting can come from many sources, including regulatory efforts to educate investors, media outlets, and experience with non-GAAP reporting, and can motivate investors to engage in deeper processing of non-GAAP reporting. For example, the SEC has recently placed additional emphasis on educating non-professional investors, launching initiatives to encourage investors to "take control of their financial future" and engaging in outreach tours (Clayton, 2019). Past efforts to educate investors about non-GAAP reporting specifically include issuing a cautionary notice to investors about the potentially misleading nature of non-GAAP metrics, creating a requirement to include a reconciliation of non-GAAP measures to the most comparable GAAP measures, and issuing a Compliance &

Disclosure Interpretation outlining several ways in which non-GAAP measures can be misleading (SEC 2001, 2003, 2018). In addition, media outlets frequently publish stories about the high level of managerial discretion present in non-GAAP reporting, as well as ways in which non-GAAP measures can be both useful and misleading (e.g. Asper, McCoy and Taylor, 2019; Bernstein, 2019; Roberts, 2020). Prior research on non-GAAP reporting has also demonstrated that more experienced and sophisticated investors react differently to non-GAAP measures than less sophisticated investors, indicating underlying differences in their understanding of non-GAAP reporting (Frederickson and Miller, 2004; Elliott, 2006).

I operationalize awareness of discretion in non-GAAP reporting using a regulatory bulletin designed to replicate the information provided by regulators and the media about non-GAAP reporting. This bulletin informs investors about two important elements of discretion in non-GAAP reporting: specifically, that (1) a variety of reconciling items and labels exist, and (2) management has substantial discretion over non-GAAP reporting. In addition, the bulletin provides a definition of non-GAAP earnings and states that non-GAAP measures can be useful. Investigating the moderating effect of awareness of managerial discretion in non-GAAP reporting not only provides important evidence on the effects of regulatory actions to increase non-professional investors' awareness of non-GAAP metrics, but also sheds light on the potential effect media attention can have on investors' understanding of accounting concepts such as non-GAAP reporting. My study can therefore inform regulators about the effectiveness of their efforts to educate investors, as well as provide new insights on how the media can serve as an education outlet,

ultimately affecting investors' judgment and decision making. In addition, my findings provide evidence on one explanation for how investor sophistication can affect investors' interpretation and use of non-GAAP measures: increased awareness of managerial discretion.

To start my investigation of non-GAAP labels, I first collect a list of the labels S&P 500 firms use to label their non-GAAP earnings. I find that over 80% of these firms report non-GAAP earnings with some form of non-GAAP label, and that over 20 different labels are used in practice. Next, I conduct a survey to understand how investors perceive differences in these labels. Given I predict investors who are less aware of managerial discretion will be more likely to rely on more diagnostic non-GAAP labels, it is important to understand how investors interpret the various non-GAAP labels used in practice. In addition, my findings about differences in labels can be used to inform future research on both the determinants and consequences of non-GAAP label choices.

Based on this preliminary evidence, I choose to focus on how labels influence investors' perceptions of the persistence of earnings performance as my operationalization of a more diagnostic non-GAAP label. While the term "persistence" can be used in a variety of ways in a non-GAAP reporting context, such as to describe the extent to which reconciling items recur or the extent to which the same non-GAAP label is used across multiple periods, in this study I focus on the extent to which the non-GAAP label used conveys persistent performance to investors. Persistent performance is particularly important in the context of non-GAAP reporting. Non-GAAP earnings metrics are often cited as being useful because they present a more representative picture of ongoing

performance (i.e., are more persistent) (e.g., PwC, 2019). In addition, persistence is a key determinant of the value relevance of earnings (e.g., Ohlson, 1999). Therefore, a non-GAAP earnings label that implies more persistent performance is diagnostic, or informative about a characteristic of earnings, in a particularly important way in an investment setting.

Based on my review of the labels used in practice and the survey data, I select two labels—"adjusted" and "core"—to test the effect of non-GAAP labels in two experiments with MBA students acting as non-professional investors. According to my survey results, these two labels differ in their perceived persistence, but are perceived similarly on other dimensions, such as familiarity and clarity. Thus, the perceived persistence of earnings associated with these labels is the primary way in which they differ in terms of their diagnosticity. "Adjusted" and "core" are also among the top five most commonly used labels in practice, and both labels are mentioned in SEC comment letters criticizing the mislabeling of non-GAAP metrics.[1]

To develop hypotheses about the effects of non-GAAP labels, I draw on the elaboration likelihood model from psychology. This model predicts the likelihood of an individual engaging in detailed processing of a message. According to the elaboration likelihood model, there are two routes through which an individual can process a message: the peripheral route or the central route (Petty and Cacioppo, 1986).[2] When using the

[1] Garavaglia and Gee (2020) provide descriptive statistics on non-GAAP label usage from 2003-2017; over 35% of firms use the "adjusted" label during this time period, and roughly 2% use the "core" label. However, custom labels, which are more likely to be diagnostic, account for over 10% of the total. Thus, testing the "core" label as an example of a diagnostic label is informative for a significant number of labels used in practice.

[2] This theory is related to other dual process theories (e.g. Schneider and Schiffrin, 1977; Chaiken, 1980). However, there are numerous dual processing models that do not always lead to the same predictions (see

peripheral route, individuals are more likely to rely on simple, heuristic cues. Reactions due to peripheral route processing are therefore primarily related to conclusions reached based on these cues. When using the central route however, individuals engage in careful and thoughtful consideration of the attributes of a message. Reactions due to central route processing are therefore primarily related to conclusions reached about overall message quality (Hilligoss and Rieh, 2018). Whether an individual is more likely to use heuristic, peripheral route processing or detailed, central route processing is a function of the individual's ability and motivation to process a message. Important to my setting, context-specific knowledge is likely to increase an individual's motivation to engage in central route processing.

Based on this theory, I predict that when investors' awareness of discretion in non-GAAP reporting is low, they will rely on peripheral route processing to form evaluate the non-GAAP metric reported by the firm. Specifically, I expect these investors will focus on heuristic cues to form an impression about the non-GAAP metric. If the label is diagnostic, investors will use the label as a heuristic cue about non-GAAP earnings. In my setting, I manipulate whether the non-GAAP label implies persistent earnings as my manipulation of diagnosticity. In cases where the non-GAAP label implies persistence, investors will assume the reported non-GAAP measure is representative of expected ongoing earnings and will be less likely to seek out additional information. However, when the label is less diagnostic, investors will be less able to use the label as a heuristic cue. Instead, they will be more likely to acquire additional information about the non-GAAP measure, such as the

Evans, 2008 for a discussion). I therefore choose the theory that maps most closely to my setting to develop predictions.

reconciliation from non-GAAP income to GAAP income, to find additional cues. As such, I predict investors who are less aware of managerial discretion in non-GAAP reporting will be more likely to access the reconciliation from non-GAAP income to GAAP income when the firm uses a less diagnostic label because investors will be searching for additional cues. The non-GAAP reconciliation in my experiment shows two consecutive years in which the firm removes a routine expense from GAAP earnings to arrive at non-GAAP earnings. The removal of the same expense in successive years should serve as a cue that the non-GAAP earnings do not represent ongoing performance.[3] I therefore predict that investors who are less aware of managerial discretion in non-GAAP reporting are more likely to view non-GAAP earnings as persistent when a more persistent label is used, and are therefore likely to be more willing to invest.

When awareness of managerial discretion in non-GAAP reporting is high, investors are motivated to engage in deeper, central route processing of non-GAAP metrics rather than relying on the label as a heuristic cue. I therefore predict no difference in reconciliation access across labels when awareness of managerial discretion in non-GAAP reporting is high. Instead, I predict these investors will use central route processing to evaluate the overall message quality, considering the entire non-GAAP reporting package in determining their willingness to invest. Again, by design my experiment tests the effect of non-GAAP labels in a setting in which the firm adds a recurring expense (stock-based compensation) to GAAP income when calculating non-GAAP income. This reconciling

[3] The removal of an expense item in multiple years creates a less persistent measure of income because the expense item is likely to persist in future years. As a result, future income will be less related to this non-GAAP measure as the expense is likely to persist.

item creates a mismatch with a non-GAAP label that implies persistence, as future earnings are likely to continue to be reduced by the excluded expense. In contrast, a less diagnostic label such as "adjusted" does not imply persistence and in fact encourages investors to seek out additional information. Taken together, this indicates investors are likely to evaluate non-GAAP reporting quality as being higher in the case of a less diagnostic label. Prior research demonstrates assessments of message quality directly influence assessments of source credibility (Slater and Rouner, 1996). In my setting, I therefore predict assessments of the quality of non-GAAP reporting will influence investors' assessments of management credibility. Thus, I predict investors will be more (less) willing to invest when the firm uses a more (less) diagnostic non-GAAP label due to lower (higher) perceptions of message quality and, by extension, management credibility.

I test these predictions in a 2 × 2 between-participants experiment in which I manipulate the non-GAAP label as being either more diagnostic, in this case implying persistent earnings ("core"), or less diagnostic ("adjusted") and the level of awareness of managerial discretion in non-GAAP reporting. Consistent with my predictions, I find an interaction between non-GAAP labels and awareness of managerial discretion for both access to the non-GAAP reconciliation and willingness to invest. With low awareness of managerial discretion in non-GAAP reporting, investors are significantly less likely to access the reconciliation from non-GAAP income to GAAP income when the firm labels non-GAAP earnings as "core," which is more diagnostic because it implies persistent performance. In addition, I find these investors assess non-GAAP income as more persistent when the firm uses this more diagnostic label ("core"), resulting in greater

willingness to invest. On the other hand, investors with high awareness of managerial discretion are equally likely to access the reconciliation from non-GAAP earnings to GAAP earnings, regardless of label. Further, I find investors with high awareness of discretion find management to be more credible when the firm uses a *less* diagnostic label because this label is more transparent, resulting in a greater willingness to invest.

I conduct a second experiment to further examine the potential benefits of increased transparency in non-GAAP reporting. Specifically, experiment two is designed to test whether awareness of discretion causes investors to react to non-GAAP labels specifically, or if these investors consider the entire non-GAAP disclosure package. I find that compared to reporting only GAAP earnings, investors with high awareness of managerial discretion react more positively to firms reporting higher non-GAAP earnings, *regardless of label,* when the firm prominently discloses the reconciliation from non-GAAP to GAAP earnings.[4] In conjunction with the results of experiment one, these findings suggest that awareness of managerial discretion causes investors to consider the overall non-GAAP disclosure strategy, and react positively to more transparent disclosures. In addition, the results of experiment two suggest one potential regulatory intervention to counteract the use of misleading labels is to require prominent reconciliations.[5]

[4] Across both experiments, I find little evidence that investors who are aware of discretion in non-GAAP reporting react negatively to the "core" label. One explanation for this somewhat surprising result is my use of stock-based compensation as the expense item excluded from non-GAAP earnings, which may be viewed as appropriate by investors. See Chapter 6 for additional discussion.

[5] My findings do not speak to the effect of a more transparent reconciliation on investors with low awareness of managerial discretion. However, Elliott (2006) tests the effects of the presence and absence of a reconciliation on investors with varying levels of sophistication and finds less sophisticated investors are less likely to rely on non-GAAP measures when a reconciliation is present. Given Elliott (2006) prominently presents the reconciliation in her materials, it is reasonable to predict a more prominent reconciliation would result in lower reliance on non-GAAP measures, including their labels, for investors with low awareness of managerial discretion in non-GAAP reporting.

My study contributes to the accounting literature on non-GAAP reporting, which has examined how specific elements of non-GAAP reporting influence non-professional investors. Previous research has found that emphasis on non-GAAP measures influences less sophisticated investors because emphasis alters investors' perceptions of the importance of the non-GAAP metric (Elliott, 2006). Although the SEC has taken action to prevent firms from placing greater emphasis on non-GAAP measures than GAAP measures, there are other ways in which firms may seek to alter investors' perceptions of non-GAAP metrics, such as by highlighting the non-GAAP metric in an infographic (Brown, Elliott and Grant, 2018). I contribute to this stream of research by documenting non-GAAP labels are another channel through which firms may alter investors' perceptions of non-GAAP measures.

Research also examines the effect of investor sophistication on investors' reactions to non-GAAP reporting. Prior research finds less-sophisticated investors (e.g., MBA students) are more likely to rely on non-GAAP information that is emphasized by managers than more sophisticated investors (e.g., analysts) (e.g. Frederickson and Miller, 2004; Elliott, 2006; Allee, Bhattacharya, Black and Christensen, 2007). While this research highlights the importance of regulatory action to protect non-professional investors from being misled by managers' non-GAAP reporting, my study is the first to directly examine the effects of knowledge about managerial discretion in non-GAAP reporting specifically. Given the SEC has taken steps to educate non-professional investors about discretion in non-GAAP reporting, it is important to understand the direct impact of these efforts on their intended audience. My findings also provide evidence on one potential explanation

for why investors of varying sophistication levels react differently to non-GAAP metrics: differences in awareness of managerial discretion in non-GAAP reporting.

My findings are also informative to regulators. I find that when awareness of managerial discretion in non-GAAP reporting is low, non-professional investors rely on the non-GAAP label in assessing firms' non-GAAP metrics. This finding indicates the SEC's concerns about the potential for non-GAAP labels to mislead investors are justified. In addition, I directly test the effect of awareness of discretion in non-GAAP reporting on investors, making my results informative to regulators about the impact of their actions to educate investors about this fact. My results suggest SEC guidance on non-GAAP reporting can be effective for investors who read it. I also find that increasing the prominence of the non-GAAP reconciliation largely undoes the effect of labeling on investors with high awareness of managerial discretion, indicating that one potential regulatory solution for misleading non-GAAP labels is to require more transparent reconciliations.

Last, my findings are informative to managers. I find awareness of managerial discretion in non-GAAP reporting causes investors to react more positively to firms that are more upfront in their non-GAAP reporting. While these findings are consistent with prior research on the importance of corporate transparency (see Bushman and Smith, 2003 for a review), my findings highlight the potential benefits of engaging in more transparent non-GAAP reporting specifically. This is particularly important as non-GAAP disclosures are often criticized for their lack of transparency, indicating some reluctance from managers to engage in transparent non-GAAP reporting practices (e.g. Tysiac, 2018).

Consistent with a pervasive lack of transparency, I find less than 10% of S&P 500 firms present a non-GAAP reconciliation adjacent to the original reporting of the non-GAAP measure. My results suggest that obfuscating non-GAAP information in this way may be counterproductive, particularly if more investors become aware of managerial discretion in non-GAAP reporting.

Chapter 2

Institutional History & Current Practice

I examine investors' reactions to non-GAAP labels and the moderating effect of investors' awareness of managerial discretion in non-GAAP reporting. This chapter provides an overview of non-GAAP reporting and additional information about the history of regulatory efforts related to non-GAAP reporting, followed by a review of academic research on non-GAAP reporting. The section concludes with information about non-GAAP labels in practice and results of a survey documenting investors' perceptions of non-GAAP labels.

2.1 Non-GAAP Regulatory History

A non-GAAP measure is one that either includes or excludes amounts that the most directly comparable measure presented under U.S. GAAP does not (SEC, 2003). For example, a non-GAAP income measure may adjust GAAP income to remove one-time gains or losses. Although the goal of non-GAAP reporting is often to present investors with a more accurate picture of ongoing firm performance (e.g. Black, Christensen, Ciesielski and Whipple, 2020), regulators have expressed concerns about the potential for investors to be misled by non-GAAP measures. The SEC released its first commentary on non-GAAP reporting in 2001 to warn investors about the potentially misleading nature of non-GAAP reporting (SEC, 2001). Shortly thereafter, the SEC issued Regulation G, "Conditions for Use of Non-GAAP Financial Measures," amended the existing Item 10 of Regulation S-K, and created a website of frequently asked questions regarding non-GAAP

measures (SEC, 2002, 2003, 2019).[6] Together these regulations significantly altered the non-GAAP reporting environment, most notably by requiring a reconciliation of non-GAAP measures to the most comparable GAAP measures, and equal prominence of the GAAP measures that are most comparable to non-GAAP measures presented in disclosures.

Research suggests that Regulation G decreased non-GAAP reporting and related managerial opportunism, at least for the period immediately following its issuance. For example, Kolev, Marquardt and McVay (2008) find exclusions from non-GAAP earnings are of higher quality after Regulation G, and firms with lower quality non-GAAP earnings in the pre-period are more likely to cease reporting non-GAAP measures in the post-period. Additional studies document a significant reduction in the mispricing of non-GAAP earnings after the passage of Regulation G (Zhang and Zheng, 2011), as well as a decrease in evidence that investors are being misled post-Regulation G (Jennings and Marques, 2011).

However, beginning in 2010, SEC commissioners again began to express concerns about issues surrounding non-GAAP reporting. In 2016, the SEC issued a Compliance & Disclosure Interpretation (C&DI) of regulations on non-GAAP measures, which it updated in 2017 and 2018 (SEC, 2018). In late 2018, the SEC issued an enforcement action against ADT Inc. for giving greater prominence to "adjusted" income metrics than the comparable GAAP metrics (SEC, 2018). This was the first enforcement action related specifically to the presentation of non-GAAP measures without additional findings of a material

[6] See Black, Christensen, Ciesielski and Whipple (2018) for a comprehensive regulatory timeline.

misstatement or omission in *calculating* the metric (Silverman, Grabar, Janghorbani and Solomon, 2019).

The SEC has not only warned investors about the risks associated with non-GAAP measures, but has also highlighted the benefits of non-GAAP reporting. For example, in the original cautionary notice on non-GAAP reporting, the SEC stated non-GAAP measures can "serve useful purposes" and "companies may quite appropriately wish to emphasize the results of core operations" (SEC, 2001). Perhaps most tellingly, the SEC has continued to allow non-GAAP reporting, stating that these measures "can add critical insight for investors" (Bricker, 2019). Specifically regarding non-GAAP labels, the SEC has indicated that non-GAAP labels, and management discretion over labeling, can be informative to investors. For example, SEC comment letters often request firms use labels that more clearly explain non-GAAP metrics rather than requiring the adoption of a specific label.

2.2 Research on Non-GAAP Reporting

Prior accounting research on non-GAAP disclosures has examined the motivations and determinants of non-GAAP reporting, as well as how non-GAAP reporting influences both individual judgment and decision-making and market outcomes. This previous research hypothesizes that there are two key motivations for management to report non-GAAP figures: (1) to shape market participants' views of negative performance (the obfuscation hypothesis), and/or (2) to highlight a more meaningful and informative predictor of future economic performance (the informativeness hypothesis) (Bradshaw and Sloan, 2002). In addition, researchers have theorized and tested the impact of non-GAAP

reporting on analysts and investors, documenting how non-GAAP reporting can influence their judgments and decisions (Frederickson and Miller, 2004; Elliott, 2006).

To address questions about the determinants and consequences of non-GAAP reporting, researchers have leveraged existing theories of discretionary disclosure. In an initial investigation of the determinants of non-GAAP reporting, Bradshaw and Sloan (2002) present competing hypotheses on mangers' motivations to report non-GAAP metrics. The first is that non-GAAP reporting is a function of management's desire to mislead and obfuscate poor performance. While this is consistent with lay theories presented by the financial press and SEC, it contradicts the efficient market hypothesis in that the market should not be "fooled" by misleading disclosures (Bradshaw and Sloan, 2002). The second hypothesis is that non-GAAP reporting is a function of management's desire to provide more informative metrics to the public, and is based on the idea that accounting standards have increased in complexity over time. According to this theory, this increase in complexity has rendered metrics produced under traditional GAAP reporting to be less relevant for investors. For example, managers may wish to remove transitory items to produce a more value-relevant earnings metric.

Early research found an increase in both the frequency of non-GAAP reporting as well as the magnitude of non-GAAP measures relative to GAAP over the period from 1985-1997 (Bradshaw and Sloan, 2002). Additional research demonstrated that despite high levels of expense exclusions in the calculation of non-GAAP metrics leading to predictably lower cash flows, investors nevertheless relied on non-GAAP measures, providing preliminary support for concerns surrounding the use of non-GAAP measures to

obfuscate poor performance and mislead investors (Doyle, Lundholm and Soliman, 2003). Further, although firms with low GAAP earnings informativeness were more likely to disclose non-GAAP measures, strategic considerations were also found to be an important determinant of non-GAAP reporting (Lougee and Marquardt, 2004). Initial experimental research demonstrated that non-professional investors were more likely to rely on non-GAAP measures than analysts (Frederickson and Miller, 2004), but that this relationship reversed in the presence of a tabular reconciliation of non-GAAP income to GAAP income. Specifically, in the presence of a reconciliation, non-professional investors were *less* likely to rely on non-GAAP measures than analysts (Elliott, 2006). In sum, early research on non-GAAP reporting demonstrated that the market relied on non-GAAP reporting and provided support for both the obfuscation and information hypotheses.

More recent research shows that despite an initial drop-off in non-GAAP reporting after the passage of Regulation G, non-GAAP reporting is once again prevalent (Black et al., 2020). In addition, non-GAAP metrics provide greater comparability to industry peers relative to GAAP reporting, suggesting that non-GAAP measures are often reported with the objective of informing the market (Black et al., 2020). Firms with a loss in the current year provide incrementally more informative non-GAAP earnings metrics (Leung and Veenman, 2018), as do firms that have recently violated a debt covenant (Christensen, Pei, Pierce, and Tan, 2019). Research also demonstrates that non-GAAP reporting decreases aggressive GAAP reporting (Guggenmos, Rennekamp and Rupar, 2019). However, CEOs are rewarded with higher pay for the use of opportunistic non-GAAP reporting, indicating

incentives still exist to engage in opportunistic non-GAAP reporting (Guest, Kothari and Pozen, 2020).

2.3 Non-GAAP Labels in Practice

Non-GAAP labels are the terms used to identify non-GAAP measures reported by a firm, such as "adjusted" or "core" income (see Appendix A for examples). In addition to the more general concerns about firms' non-GAAP reporting practices discussed above, the SEC has also expressed specific concerns about the mislabeling of non-GAAP metrics (see Appendix B for examples). Mislabeling non-GAAP metrics has been defined as the use of common, well-defined terms to refer to firms' own custom performance metrics (Rapoport, 2013).

To collect a sample of non-GAAP labels used in practice, I examine all S&P 500 firms' Q4 2016 earnings releases. I find these firms collectively use over 20 labels to describe their non-GAAP earnings metrics. However, several labels are used by only one firm or are industry specific. The labels used by only one firm include: "managed," "guidance basis," "historical basis," "economic," "before changes/gains" and "modified." Industry specific terms include "FFO," which is defined as funds from operations by real estate investment trusts, "net investment income" by financial firms, and various tax-related terms. Thus, I use the following list of 12 non-GAAP earnings labels for my survey: "adjusted," "non-GAAP," "operating," "constant currency," "core," "organic," "comparable," "underlying," "same-store," "ongoing," "normalized," and "pro forma"

(see Table 1 for frequencies). In total, I find over 84% of S&P 500 firms use one or more of these terms to label the non-GAAP earnings metrics they report.[7]

To provide preliminary evidence on how non-professional investors perceive the persistence of non-GAAP earnings with these labels, I conduct a survey with working professional MBA students from a highly rated MBA program in the United States.[8] I focus specifically on the extent to which labels communicate persistent performance as non-GAAP measures are often reported to provide a more persistent measure of earnings (e.g., White, 2016). In addition, earnings persistence has clear implications for firm value. Specifically, more persistent earnings are impounded into value at a higher rate (e.g., Ohlson, 1999). To measure perceived persistence, I ask participants to assess the extent to which each label conveys persistence on a 101-point scale from -50 to +50 where -50 (+50) is labeled "temporary" ("ongoing"). The midpoint of each scale is labeled as "neither temporary nor ongoing." I also collect measures of investors' perceptions of each label along nine additional dimensions to rule out possible alternative explanations for my results.[9] Specifically, I collect investors' perceptions of each label's positivity, familiarity, reliability, officiality, complexity, clarity, transparency, abstractness and trustworthiness.

[7] The total number of labels used as presented in Table 1 exceeds 500 as some firms use more than one label for their non-GAAP income metrics. In total, 421 firms present a non-GAAP income metric (84.2% of my sample), of which 133 use more than one label (31.6% of firms that report a non-GAAP income metric). The most common labels used in conjunction with another label are "adjusted" and "non-GAAP." Thirty-two firms use both "adjusted" and "non-GAAP," 65 firms use "adjusted" in conjunction with another label (e.g. "adjusted operating income"), and 18 firms use "non-GAAP" in conjunction with another label (e.g. "operating income (non-GAAP)").

[8] All studies received IRB approval at the author's institution.

[9] Participants also assess the pairwise similarity of the non-GAAP labels presented in Table 1 for use in a multidimensional scaling analysis (see Giguere, 2006 for an overview). Results of this analysis (untabulated) generally support persistence as the primary dimension explaining differences between non-GAAP labels.

Mean persistence judgments are presented in Table 1, with a graphical depiction in Panel B of Figure 1. Consistent with persistence being the primary driver of differences in investors' perceptions of the "core" and "adjusted" label, I find both labels are significantly different from the midpoint of the persistence scale, but in *opposite* directions. That is, earnings labeled as "core" (31.03) are perceived to be *more* persistent than the midpoint, and earnings labeled as "adjusted" (mean = -19.84) are perceived to be *less* persistent than the midpoint (both $p < 0.01$). In addition, a paired t-test confirms that participants' ratings of perceived persistence differ for the "adjusted" and "core" labels (means of -19.84 and 31.03 respectively, $t_{78} = -13.24$, $p < 0.01$).

The only other dimensions for which both labels differ significantly from the midpoint are familiarity, officiality and clarity. However, for these other dimensions, the "core" and "adjusted" labels differ from the midpoint in the *same* direction; that is, both labels are viewed as being relatively familiar, official and clear. Together these findings support persistence as being the primary difference in investors' perceptions of the "core" and "adjusted" labels. These labels are also among the top five most commonly used labels in practice (see Table 1). Thus, I focus on these two labels in my experiments. To provide additional evidence on the role of persistence in my specific experimental context, I also measure perceptions of persistence and test this measure as a mediator.

Chapter 3

Theory

3.1 Elaboration Likelihood Model

The elaboration likelihood model predicts the likelihood of an individual engaging in detailed processing of a message when forming an opinion about that message (Petty and Cacioppo, 1986). When elaboration likelihood is low, individuals are likely to engage in peripheral processing, which involves relying on a simple cue or cues to determine the validity of a message without considering its overall quality. Reactions due to peripheral processing are related primarily to reliance on these heuristic cues. When elaboration likelihood is high, individuals are likely to engage in a process called central processing, which involves careful and thoughtful consideration of attributes of the message to arrive at a conclusion. Under central route processing, reactions are driven by evaluations of message quality (Hilligoss and Rieh, 2008).

The likelihood of engaging in central processing as opposed to peripheral processing is affected by both situational factors and individual differences. For example, studies have shown that distraction and repetition both affect depth of processing, albeit in different directions. Petty, Wells, and Brock (1976) demonstrate that when individuals are given a distraction task, their depth of processing decreases due to a decreased ability to concentrate on processing the message. On the other hand, Cacciopo and Petty (1985) demonstrate that when a message is repeated, depth of processing increases due to an increased ability to process the message. Individual differences that affect an individual's depth of processing include the personal relevance of the message and need for cognition.

Petty and Cacioppo (1979) and Cacioppo, Petty and Morris (1983) demonstrate that as the personal relevance of a message and an individual's need for cognition increase, so too does the depth of processing as a result of increased motivation.

In sum, the likelihood of elaboration is a function of an individual's ability and motivation to process a message. For example, children have low motivation *and* ability to engage in central processing; they are unlikely to carefully consider attributes of a message to arrive at a conclusion. Instead, children are likely to engage in peripheral processing, relying on simple cues like affective reactions to arrive at a conclusion. As children age, their motivation and ability to engage in central processing increase. Boush, Friestad and Rose (1994) demonstrate that as children age, their skepticism toward advertising increases, resulting in deeper processing of advertising messages. This study is particularly notable, as it documents a direct link between knowledge of advertiser tactics and increased motivation to process advertisements. Analogizing to the non-GAAP setting, this suggests that knowledge of managerial discretion could increase investors' motivation to process non-GAAP disclosures more carefully.

Limited research in accounting draws on the elaboration likelihood model, and that which does is primarily based in the auditing domain. For example, Peytcheva, Wright and Majoor (2014) demonstrate that principles-based accounting standards result in higher process accountability for auditors than rules-based accounting standards, and that higher process accountability increases auditors' motivation and depth of processing as well as their demand for audit evidence. Bhattaracharjee and Brown (2017) find auditors who share an alumni-affiliation with a client manager engage in deeper processing of messages

from the client because shared group membership serves to motivate more systematic, or central route, processing. Backof (2015) draws on the elaboration likelihood model to explain why jurors in an auditor negligence case are more readily able to attend to written evidence (audit workpapers) than oral evidence (testimonies), finding that audit workpapers documenting consideration of alternative accounting treatments increase perceived auditor negligence. In a financial reporting and investment context, Elliott, Hodge and Sedor (2012) test the effect of delivery mode on depth of information processing, finding differences between investor reactions to restatements when the restatement is disclosed in a text-based versus video-based press release.

3.2 Theoretical Model

In the next chapter, I draw on the elaboration likelihood model to develop directional hypotheses about how non-GAAP labels influence investors' information search process and investment willingness. Although the directional effects I predict are specific to my setting, I expect the theoretical model supporting these predictions to generalize. Specifically, I posit that when awareness of managerial discretion in non-GAAP reporting is low, investors will be more likely to engage in peripheral route processing to evaluate a firm's non-GAAP reporting. This will involve relying on non-GAAP labels when they convey a meaning that is relevant to investment decisions, and only considering reconciling items when the label does not provide useful information. Conversely, I predict that when awareness of managerial discretion in non-GAAP reporting is high, investors will be more likely to engage in central route processing. This

will entail considering both the non-GAAP label *and* reconciling items in arriving at valuation judgments. I present this theoretical model in Figure 2.

Chapter 4

Hypothesis Development

4.1 Hypothesis One – Reconciliation Access

To hypothesize about the effects of non-GAAP labels and awareness of managerial discretion in non-GAAP reporting on investors' information acquisition and investment willingness, I draw on the elaboration likelihood model (Petty and Cacioppo, 1986). This model predicts the depth of processing an individual will engage in to interpret and evaluate a message, and is appropriate for my setting as I seek to hypothesize about how investors will react to firms' non-GAAP disclosures. The elaboration likelihood model posits that depth of processing is determined by an individual's ability and motivation to process a message. In my setting, I predict investors' motivation to engage in deeper processing of non-GAAP disclosures will be affected by their awareness of managerial discretion in non-GAAP reporting.

When awareness of managerial discretion is low, I expect investors will have low motivation to engage in deeper processing of non-GAAP disclosures given they are less likely to be aware of the discretion involved in non-GAAP reporting. Instead, investors will be more likely to engage in peripheral processing of non-GAAP metrics. This will involve using heuristic cues to evaluate the non-GAAP measure being reported. In the case of a more diagnostic non-GAAP label, investors are more likely to be able to evaluate the non-GAAP metric using the label alone relative to when a less diagnostic label is used. In my experimental setting specifically, a more diagnostic label is one that conveys higher levels of earnings persistence. Non-GAAP measures are often cited as being useful

because they provide a more accurate representation of ongoing (i.e. persistent) earnings, and persistent earnings are impounded into valuation at a higher rate (PwC, 2019; Ohlson, 1999). In the case of a less diagnostic label, investors will be more likely to look for additional information to use as a cue for evaluating the reported non-GAAP metric, resulting in a higher likelihood that investors will access the reconciliation from non-GAAP income to GAAP income.

When awareness of managerial discretion is high, investors will have greater motivation to engage in more careful processing of non-GAAP disclosures to evaluate the overall message quality. I therefore predict investors with high levels of awareness of managerial discretion in non-GAAP reporting will not be influenced by the non-GAAP label when deciding whether or not to access the reconciliation from non-GAAP income to GAAP income. Instead, investors with high levels of awareness will be motivated to engage in deeper, central route processing and will seek out additional information about the non-GAAP metrics presented, regardless of label.

To summarize, I predict investors with low levels of awareness of managerial discretion in non-GAAP reporting will use peripheral route processing and will therefore treat a diagnostic non-GAAP label as a heuristic cue about the non-GAAP measure being reported. When a less diagnostic label is used, investors will seek out additional cues to use in understanding the metric, which in my setting will entail accessing the reconciliation from non-GAAP income to GAAP income. Investors with high awareness of managerial discretion in non-GAAP reporting will be motivated to engage in central route processing regardless of label, and will therefore not be influenced by the non-GAAP label when

determining whether or not to access the reconciliation. This hypothesis is stated formally below.

> **H1:** When awareness of managerial discretion in non-GAAP reporting is low (high), a more diagnostic non-GAAP label will (will not) decrease investors' likelihood of accessing the reconciliation from non-GAAP income to GAAP income.

A summary of my predictions can also be found in Table 2, with graphical depictions in Figure 3.

4.2 Hypothesis Two – Willingness to Invest

In H1, I predict differences in reconciliation access. In my study, investors who access the reconciliation see the firm removes an ongoing expense (stock-based compensation) in two consecutive years. This repeated removal of an expense suggests that non-GAAP earnings do *not* represent ongoing performance, as the expense is likely to continue in the future. This is important, as more persistent earnings are impounded into value at a higher rate (e.g. Ohlson, 1999). In addition, adding back an ongoing expense means that my setting involves the common situation in which non-GAAP earnings exceed GAAP earnings. Thus, differences in reconciliation access and the diagnosticity of the non-GAAP label also have consequences for willingness to invest.

When awareness of managerial discretion in non-GAAP reporting is low, investors will use a diagnostic non-GAAP label as a heuristic cue. In this case, the non-GAAP label will serve as a cue that non-GAAP earnings are persistent, resulting in a lower likelihood of accessing the reconciliation from non-GAAP to GAAP income and greater willingness to invest. On the other hand, a less diagnostic label does not provide a heuristic cue. This will result in a higher likelihood of accessing the reconciliation to search for additional

cues to use when evaluating the metric. After accessing the reconciliation, these investors will assign a lower level of persistence to non-GAAP earnings based on the content of the reconciliation; namely, the exclusion of a recurring expense. Thus, I predict investors with low levels of awareness of discretion in non-GAAP reporting will be more willing to invest when a firm uses a more diagnostic label relative to when the firm uses a less diagnostic label due to perceptions of both higher and more persistent non-GAAP earnings.

When awareness of managerial discretion in non-GAAP reporting is high, I predict no difference in reconciliation access. Instead, I predict investors will be motivated to access the reconciliation regardless of label to evaluate the overall quality of the message. When accessing the reconciliation, these investors will observe that adding back a recurring expense (stock-based compensation) for two consecutive years creates a mismatch with the use of a diagnostic non-GAAP label that implies persistent earnings. This mismatch is likely to result in a lower evaluation of the quality of the non-GAAP measure. A less diagnostic label does not create this mismatch, and also may be viewed as an indication that investors should seek additional information. This more transparent reporting choice is likely to result in a higher evaluation of the quality of the non-GAAP disclosure.

Prior research demonstrates assessments of message quality directly affect assessments of source credibility (Slater and Rouner, 1996). Thus, I predict investors' evaluations of non-GAAP quality will also affect their assessments of management credibility and, ultimately, their willingness to invest. In my experiment, investors observe a mismatch between the more diagnostic label and the underlying calculation. I predict this

mismatch will result in lower assessments of message quality and therefore management credibility. This is consistent with prior research demonstrating more sophisticated investors are able to see through impression management techniques and react negatively when they perceive firms to be intentionally misleading investors (Tan, Wang and Zhou, 2014). However, when investors in my experiment see a less diagnostic label, they may perceive management as being transparent about the nature of the non-GAAP measure (i.e., that it is adjusted) and encouraging investors to seek additional information via the label choice. I predict this more transparent choice will result in higher evaluations of message quality and therefore management credibility. This positive reaction is consistent with research demonstrating individuals are more likely to trust an adviser when the adviser is upfront about conflicting incentives, as well as with past accounting research demonstrating investors initially assess management to be more credible when they issue more forthcoming disclosures (Cain, Loewenstein and Moore, 2005; Mercer, 2005).

Both of these effects—reacting negatively to a firm using an inappropriate label and reacting positively to a firm being more transparent—predict the same directional effect for investors with high awareness of managerial discretion. Specifically, both effects predict investors will react more (less) favorably to a non-GAAP measure with a less (more) diagnostic label when the underlying calculation reveals less persistent non-GAAP earnings. As a result, I predict greater willingness to invest in my setting when awareness of management's discretion in non-GAAP reporting is high and the firm uses a less diagnostic label.

To summarize, I predict that when awareness of managerial discretion in non-GAAP reporting is low, investors will be more willing to invest when the firm uses a diagnostic non-GAAP label that implies persistence. When awareness of discretion is high, investors will be *less* willing to invest when the firm uses a diagnostic non-GAAP label that implies persistence. This hypothesis is stated formally below.

> **H2:** When awareness of managerial discretion in non-GAAP reporting is low (high) and non-GAAP earnings exceed GAAP earnings, a more diagnostic non-GAAP label implying persistence used in conjunction with a less persistent calculation of non-GAAP earnings will increase (decrease) willingness to invest.

4.3 Applying the Theoretical Model

In Chapter 3, I present a theoretical model for how investors' awareness of discretion in non-GAAP reporting affects their willingness to invest. Specifically, I posit that when awareness of managerial discretion in non-GAAP reporting is low, investors will be more likely to engage in peripheral route processing to evaluate a firm's non-GAAP reporting. In my specific experimental setting, this will involve consideration of the persistence of non-GAAP earnings based either on the non-GAAP label or the nature of the reconciling items. Conversely, I predict that when awareness of managerial discretion in non-GAAP reporting is high, investors will be more likely to engage in central route processing. In my setting, this will involve investors' evaluating the quality of non-GAAP reporting, with these quality assessments ultimately affecting their assessments of management's credibility and therefore their willingness to invest.

Chapter 5
Experiment One

5.1 Design, Procedures and Participants

To test the effects of non-GAAP labels and awareness of managerial discretion in non-GAAP reporting, I conduct a 2 × 2 between-participants experiment. I manipulate the diagnosticity of the label used by the firm and the presence or absence of a prompt informing participants about discretion in non-GAAP reporting. As discussed previously, I manipulate the diagnosticity of the label via the perceived persistence of non-GAAP earnings labeled as "adjusted" or "core." To manipulate awareness of managerial discretion, I provide participants with a brief bulletin from the SEC on non-GAAP reporting. This bulletin is designed to provide participants with information that is similar to the content of the SEC's releases on non-GAAP reporting, including explaining that there is managerial discretion in both the calculation and labeling of non-GAAP measures (e.g., SEC, 2001, 2016). Importantly, I intentionally design the bulletin to have a balanced tone, consistent with SEC statements that non-GAAP reporting *can* be useful, but also warning investors that companies have discretion over non-GAAP reporting (see Appendix C).

I recruit MBA students as participants, consistent with the participants used in my survey examining the extent to which non-GAAP labels convey persistent performance. As my experimental design is based in part on the results of the survey, it is important to use a similar population to ensure the non-GAAP labels are perceived in a similar way. Further, MBA students are a well-accepted proxy for non-professional investors, and have been shown to be appropriate participants in experiments investigating the judgments of non-

professional investors (Elliott, Hodge, Kennedy and Pronk, 2007). I choose to focus on non-professional investors in my study so that my results directly speak to the efficacy of the SEC's efforts to educate non-professional investors. I recruit a total of 120 full-time MBA students from a large public university for my study.

The experiment is operationalized using the Qualtrics online survey platform, but administered in a controlled laboratory setting. On arrival, participants are first randomly assigned to experimental conditions. Participants in the high awareness condition receive a bulletin from the SEC on non-GAAP reporting and a comprehension check question related to the bulletin. Participants are required to correctly answer this question before proceeding with the experiment. I then provide all participants with a technology firm's Q4 earnings release, which includes my manipulation of the non-GAAP label.[10] In the earnings release, non-GAAP earnings exceed GAAP earnings, and GAAP (non-GAAP) earnings are presented as having a growth rate that is equivalent to (greater than) the industry average.[11]

Below the earnings release is an optional hyperlink to a section titled "Supplemental Information," which opens in a separate window. This design enables me to collect data for my first dependent measure: participants' access of the non-GAAP reconciliation. Participants who access the Supplemental Information page observe a tabular presentation of the financial results from the main earnings release, and the reconciliation of the non-GAAP measure to the most comparable GAAP measure (see

[10] I select a technology company as it has been a common industry choice for non-GAAP experiments (e.g. Elliott, 2006; Brown et al., 2018).
[11] Firms more commonly report non-GAAP income metrics that exceed GAAP metrics, and are likely to use opportunistic disclosures in these cases (see Curtis, McVay and Whipple, 2014 for a discussion).

Appendix C). I design the experiment in this way to mimic the effort required to search for non-GAAP reconciliations provided in actual earnings releases; that is, I find that less than 10% of S&P 500 firms present the non-GAAP reconciliation adjacent to the initial reporting of the non-GAAP measure.[12] On the screen with the earnings release, participants respond to dependent measures regarding their willingness to invest, followed by a manipulation check and process measures.

Although the reconciliation from non-GAAP income to GAAP income is held constant across conditions, an important part of my experimental design is the selection of the reconciling item. The reconciliation shows the firm adds back stock-based compensation expense to GAAP income in two consecutive years to arrive at the non-GAAP income metric. I choose to remove the expense in two consecutive years to be consistent with the SEC's concerns about mislabeling; it is inappropriate to use a persistent label when removing a recurring expense from earnings. I choose stock-based compensation specifically because it is important for the excluded item in my experiment to be plausible so that overall perceptions about the (in)appropriateness of the reconciling item do not dominate the effect of label. Archival studies confirm stock-based compensation expense is commonly excluded from non-GAAP earnings (Barth, Gow and Taylor, 2012; Mohanram, White and Zhao, 2020).

Because it is possible investor reactions could differ depending on the reconciling item, I conduct an out of sample test on Amazon's Mechanical Turk platform in which I

[12] In all other cases, investors must search for the reconciliation from non-GAAP to GAAP. In addition, it is not always apparent that the measure being reported is a non-GAAP measure, and non-GAAP reconciliations are often more complex than the simplified version I use in my experiment.

ask participants to rank the appropriateness of a firm adding back several expense items to arrive at a "core" income metric. The expense items tested include research and development, amortization, income tax and stock-based compensation. These expense items were all selected as they are likely to persist across multiple years and were cited in SEC comment letters regarding the inappropriate use of the "core" label. This test indicated no difference in the appropriateness of these adjusting items (average appropriateness was 57.01 on a 101-point scale), suggesting investor responses would not differ for any of these common reconciling items.

5.2 Dependent Measures

To test H1, regarding investors' reconciliation access, I create a binary measure where 1 (0) indicates participants did (did not) click the link for supplemental information. To test H2, regarding investment willingness, I ask participants two questions about their willingness to invest. The first question asks "How attractive is an investment in the Tech Company's stock?" on a scale from 0 to 100 where 0 (100) is labeled "Not at all attractive" ("Very attractive"). The second question asks "How likely are you to invest in the Tech Company's stock?" on a scale from 0 to 100 where 0 (100) is labeled "Not at all likely" ("Very likely").[13]

I also collect process measures for use in a mediation analysis. My theoretical model predicts two different potential mediators depending on awareness of discretion: perceived persistence of non-GAAP earnings and management credibility for participants with low and high awareness of managerial discretion, respectively. To measure the

[13] Participants also answer a question about a price-earnings multiple for The Tech Company's common stock. As results for this question did not differ across conditions, I do not discuss this measure further.

perceived persistence of non-GAAP earnings, participants are separately asked how persistent they think the Tech Company's net income and core/adjusted income are.[14] I ask participants about both income measures to ensure they are correctly recalling the non-GAAP measure when answering the question about core/adjusted income.[15] Both questions are asked on a 101-point scale where 0 (100) is labeled "Not at all persistent" ("Very persistent"). To measure management credibility, I ask two questions based on prior literature. Specifically, I ask participants how competent and how trustworthy they believe the Tech Company's management is (Koonce and Lipe, 2010; Rennekamp, 2012). Both questions are asked on 101-point scales where 0 (100) is labeled "Not at all competent/trustworthy" ("Very competent/trustworthy").[16]

5.3 Manipulation Check

Participants in the high awareness of managerial discretion condition must successfully answer a comprehension check question to proceed with the task. As such, I do not ask a separate manipulation check question for my awareness manipulation. To ensure my manipulation of non-GAAP labels is effective, all participants are asked which income measures the firm presented, with "net income and adjusted income" and "net

[14] Only the non-GAAP label corresponding to each participant's condition is included in the question stems.
[15] Results are consistent if I use the difference between the two persistence measures in place of the non-GAAP persistence measure.
[16] Given I predict investors with high awareness of managerial discretion will consider the appropriateness of the non-GAAP label when assessing management credibility, I also ask "How appropriate do you think the Tech Company's use of the label "core/adjusted" for its non-GAAP earnings measure is?" with 0 (100) labeled "Not at all appropriate" ("Very appropriate"). Inferences for all tests of management credibility are the same if I also include the measure of label appropriateness in the calculation of credibility, or use only the measure of label appropriateness on its own.

income and core income" as their choices. Ninety-nine percent of experimental participants correctly identify the income metrics they viewed.[17]

5.4 Reconciliation Access

H1 predicts that when awareness of managerial discretion in non-GAAP reporting is low, participants will be less likely to access the non-GAAP to GAAP reconciliation when a more diagnostic label is used. In the context of my experiment, this hypothesis implies that reconciliation access will be lower when non-GAAP income is labeled as "core" compared to "adjusted." In addition, I predict reconciliation access will not differ by label condition when awareness of managerial discretion is high. Participants in my study must choose to access a link with supplementary information to view the reconciliation. This design choice allows me to track access to the supplemental information. I code access with a dummy variable where a value of 1 (0) indicates participants do (do not) access the supplementary information.

Panel A of Table 3 presents descriptive statistics for access to supplementary information, with statistical tests in Panels B and C. Consistent with my predictions, results of a categorical model show a significant interaction between non-GAAP label and awareness of managerial discretion in non-GAAP reporting ($\chi^2_{(1)} = 4.89$, $p = 0.03$).[18] A graphical depiction of results (presented in Panel B of Figure 3) and simple effects tests provide further support for my predictions. When awareness of discretion is low, investors

[17] At a construct level, the survey results presented in Chapter 2 confirm the "core" and "adjusted" labels differ in perceived persistence.

[18] All statistical tests are two-tailed unless otherwise noted for directional predictions. In cases where I make *ex ante* directional predictions, I use one-tailed statistical tests based on these predictions (Dubey, 2007; Ruxton and Neuhauser, 2010; Ludbrook, 2013).

are less likely to view the supplementary information section when the firm uses the "core" label than when the firm uses the "adjusted" label ($\chi^2_{(1)} = 3.89$, $p = 0.04$). When awareness of discretion is high, the non-GAAP label does not significantly influence participants' reconciliation access; I do not observe a significant difference in access for these investors when a firm uses the "core" label compared to the "adjusted" label ($\chi^2_{(1)} = 1.35$, $p = 0.25$). In sum, these results are consistent with the predictions in H1.

5.5 Willingness to Invest

In H2, I predict that when awareness of discretion is low, investors will be more willing to invest when a firm uses the "core" label relative to the "adjusted" label. When awareness of discretion is high, I predict the opposite: lower willingness to invest when a firm uses the "core" label relative to the "adjusted" label. Panel A of Table 4 presents descriptive statistics for willingness to invest, with statistical tests in Panels B and C. Consistent with my predictions, I find a significant interaction between non-GAAP label and awareness of discretion in non-GAAP reporting for measures of investment attractiveness ($F_{1,116} = 6.52$, $p = 0.01$), and investment likelihood ($F_{1,116} = 5.28$, $p = 0.02$). As results for the two measures are similar, I confirm the internal reliability of the two measures ($\alpha = 0.82$), and combine the measures using an arithmetic average in further discussions.

Graphical depictions of my results, presented in Figure 3, Panel B, are also consistent with my predictions. When awareness of managerial discretion is low, investors are more willing to invest when the firm uses the "core" label. When awareness is high, investors are *less* willing to invest when the firm uses the "core" label. Simple effects tests,

presented in Panel C of Table 4, further support my predictions. The effect of non-GAAP label on average willingness to invest is marginally significant when awareness is low (t_{116} = 1.38, p = 0.09, one-tailed), and significant when awareness is high (t_{116} = -2.34, p = 0.01, one-tailed).

These results support my predictions. When awareness of managerial discretion in non-GAAP reporting is low and non-GAAP earnings exceed GAAP, investors are more willing to invest when a firm uses a more diagnostic label implying persistence even in the presence of a less persistent calculation of non-GAAP earnings. When awareness of managerial discretion in non-GAAP reporting is high and non-GAAP earnings exceed GAAP, investors are *less* willing to invest when a firm uses a more diagnostic non-GAAP label implying persistence in conjunction with a less persistent measure of earnings.

5.6 A Note on Measurement-of-Mediation

The next section discusses the results of a mediation analysis as a test of my theoretical model. The measurement of psychological processes in the same experiment as the relationship between the independent and dependent variable is subject to several limitations, including (1) the potential contamination of the dependent and/or mediator variable, (2) unpredicted interactions between the independent variables and the mediators (3) the correlational nature of these tests, (4) lack of theoretical distinction between mediators and dependent variables, and (5) low power, (e.g. Spencer, Zanna and Fong, 2005).

I attempt to overcome these limitations in several ways. First, with regard to the potential for contamination of the dependent variable, I measure my proposed

psychological processes after my primary dependent measures to avoid creating the predicted causal chain by design (Spencer et al., 2005). In addition, I collect data on participants' access to the reconciliation as further evidence of the theoretical process. This is a behavioral process measure: it is an unobtrusive measure of participants' actions in determining their investment intentions and is collected without their explicit knowledge (Asay et al., 2020). It is therefore unlikely to be contaminated by (or contaminate) the primary dependent measures.

In addition, my theory and experimental design help to alleviate concerns regarding unpredicted interactions between the independent variables and the mediators, the correlational nature of measurement-of-mediation tests, and the potential for a lack of theoretical distinction between mediators and dependent variables. Specifically, my theory and hypotheses predict processes that move in opposite directions for different levels of the moderator (i.e., awareness of managerial discretion in non-GAAP reporting). For participants with low levels of awareness of managerial discretion in non-GAAP reporting, I predict a *positive* effect of the "core" label relative to the "adjusted" label on investment willingness via a positive effect on perceived non-GAAP income persistence. For participants with high levels of awareness of managerial discretion in non-GAAP reporting, I predict a *negative* effect of the "core" label relative to the "adjusted" label via a negative effect on management credibility. I therefore explicitly predict an interaction between my independent variables and mediators. I also collect and simultaneously model all process measures for all participants. Because I predict a positive (negative) effect of the "core" label for participants with low (high) levels of awareness of managerial

discretion, and model both processes in all conditions, I rule out the possibility that my results are driven solely by common-method variance or a lack of theoretical distinction between my proposed mediators and dependent variable (Doty and Glick, 1998). Put simply, if my results were driven by either of these issues, all links in the model would be statistically significant and identically signed for all conditions.

Last, I predict the relationship between the mediating variables and the dependent measure will not significantly differ across conditions. Leveraging prior research, I predict a positive relationship between my two mediators (assessments of income persistence and assessments of management credibility) and my dependent variable (investment willingness) (Ohlson, 1999; Mercer, 2005). This prediction indicates a traditional measurement of mediation analysis is appropriate (Spencer et al., 2005).

5.7 Supplemental Analysis – Theoretical Model

My theoretical model predicts the path through which non-GAAP labels influence investors' willingness to invest depends on awareness of managerial discretion in non-GAAP reporting. Specifically, when awareness is low, investors will use peripheral route processing to evaluate the non-GAAP metric being reported. This will involve using the label or nature of the reconciling items as a heuristic cue. In the case of a diagnostic label conveying a persistent measure of income, the perceived persistence of non-GAAP earnings will be higher relative to when a less diagnostic non-GAAP label is used, resulting in higher willingness to invest. When awareness of discretion is high, investors will use central route processing to engage in a deeper evaluation of management's non-GAAP reporting strategy. This will involve consideration of the non-GAAP label *and*

reconciliation to assess management credibility when reaching an investment decision. I collect additional measures to test this theoretical model, including measures of non-GAAP income persistence and management credibility.

Descriptive statistics, ANOVA and simple effects tests for non-GAAP persistence and management credibility judgments are presented in Table 5. To directly test the validity of my theoretical model, I use the SPSS PROCESS macro Model 8 to simultaneously examine these two mediators (Hayes, 2018).[19] Figure 4 presents my statistical model.[20] My dependent variable in the model is the average of the investment attractiveness and investment willingness measures. I model perceived non-GAAP persistence using investors' responses to the non-GAAP income persistence question, and management credibility using the average of management competence and management trustworthiness.

Consistent with my predictions, the effect of non-GAAP label on perceived non-GAAP income persistence depends on awareness of managerial discretion in non-GAAP reporting. When awareness is low, investors judge non-GAAP income to be more persistent when the firm uses the "core" label than when the firm uses the "adjusted" label (90% CI [+4.35 , +20.94]) but there is no relationship between label and non-GAAP income persistence when awareness is high (90% CI [–6.34 , +9.94]). In addition, the

[19] Alternatively, this analysis could be conducted using structural equation modeling (SEM). The primary difference between these two methods is that PROCESS tests the model using ordinary least squares (OLS) regressions while SEM tests the model using maximum likelihood (ML) regressions. Both methods have been shown to generate similar results, and PROCESS is preferred in cases with smaller sample sizes (Hayes [2018]).

[20] I do not include participants' reconciliation access in the model as my predictions about the directional effects of the mediating relationships inherently account for my predictions about access. For example, I predict access will be lower in the "core" / low awareness condition than the "adjusted" / low awareness condition, and that this difference in access is what drives differences in perceived persistence.

effect of non-GAAP label on management credibility depends on awareness of managerial discretion in non-GAAP reporting. When awareness is high, investors find management to be more credible when the firm uses the "adjusted" label (90% CI [–12.46, –0.38), but there is no relationship between label and credibility when awareness is low (90% CI [–4.05 , +8.23]). Both non-GAAP income persistence and management credibility are positively related to willingness to invest (90% CI [+0.08 , +0.32] and [+0.20 , +0.53], respectively). Consistent with recent statistical recommendations, I also examine the index of moderated mediation (Hayes, 2015). The index of moderated mediation is a test of the difference between conditional indirect effects; this test examines if the difference between levels of awareness within each causal pathway is significant. The difference between high and low awareness for the non-GAAP persistence pathway is marginally significant (p = 0.07, untabulated), and the difference for the credibility pathway is significant (p = 0.05, untabulated). Together, these findings provide support for my proposed theoretical model.

5.8 Supplemental Analysis – High Awareness of Managerial Discretion

I find that when awareness of managerial discretion in non-GAAP reporting is high, investors are more willing to invest when a firm uses the "adjusted" non-GAAP label relative to the "core" non-GAAP label. As noted in my hypothesis development, it is possible two separate forces drive this reaction: negative reactions to a firm that inappropriately uses a more diagnostic label (in this case, use of the "core" label with a less persistent measure of earnings) and/or positive reactions to a firm that uses a less diagnostic and therefore more transparent label (in this case, use of the "adjusted" label to

encourage investors to seek additional information). In this section, I provide preliminary evidence on which of these forces is at work.

Because reconciliation access is relatively equal in both "adjusted" conditions ($\chi^2_{(1)}$ = 0.82, p = 0.37), the low awareness / "adjusted" participants serve as a meaningful comparison group for the high awareness / "adjusted" participants. Specifically, any difference in willingness to invest across these two groups is attributable to the manipulation of awareness of discretion, as both label and access to the reconciliation are held relatively constant across conditions.[21] If willingness to invest in the high awareness / "adjusted" condition is significantly greater than in the low awareness / "adjusted" condition, this would indicate awareness of managerial discretion in non-GAAP reporting causes investors to react positively when a firm uses a more transparent label. However, if awareness of discretion only causes investors to react negatively to the use of an inappropriate label, there would be no effect of awareness of discretion on willingness to invest for investors when the "adjusted" label is used.

Results (presented in Figure 3 and Table 4) show awareness of discretion causes investors to react more positively to a firm that uses the "adjusted" label. Specifically, when the firm uses the "adjusted" label, investors with high awareness of discretion are more willing to invest (average willingness to invest mean = 64.40) than investors with low awareness of discretion (mean = 52.05; $p \leq 0.01$). This is consistent with investors who have high levels of awareness of managerial discretion reacting positively to the transparency associated with using a less diagnostic non-GAAP label in this setting.

[21] The same comparison cannot be made for the "core" conditions because, consistent with my theory, reconciliation access is significantly different across conditions ($\chi^2_{(1)}$ = 5.00, p = 0.03)

As further support for this explanation, I examine differences in management credibility across conditions. Investors' assessments of management credibility are significantly greater in the high awareness / "adjusted" condition than in all other conditions (all $p < 0.05$).[22] This indicates the use of a less diagnostic label increases perceived management credibility resulting in a greater willingness to invest, which is consistent with past research suggesting individuals are more likely to trust an adviser when the adviser is transparent about conflicting incentives (Cain et al., 2005). Experiment Two provides additional evidence on the role of transparency in investors' reactions to non-GAAP labels.

[22] I note that my research is not able to identify if investors are reacting appropriately to more transparent disclosures. That is, investors may be reacting too favorably to a more transparent non-GAAP label.

Chapter 6

Experiment Two

Supplemental analyses for Experiment One suggest awareness of managerial discretion in non-GAAP reporting causes investors to react positively to a firm that uses a less diagnostic non-GAAP label, likely because they perceive the less diagnostic label as reflecting greater transparency. Experiment Two further examines the role of transparency in non-GAAP reporting. Specifically, E2 tests if investors' react favorably to transparency in non-GAAP reporting regardless of the non-GAAP label, or if the non-GAAP label plays an incremental role.

6.1 Design, Procedures and Participants

Experiment Two has a 3 × 1 between-participants design. In this experiment, all participants receive the investor bulletin manipulation from E1, giving all participants high awareness of discretion in non-GAAP reporting. As in E1, I manipulate the diagnosticity of the non-GAAP label using the "core" and "adjusted" labels. Unlike E1, I also include a condition in which the firm does not report a non-GAAP measure. This design creates a control group to determine whether investors react negatively or positively to firms who report non-GAAP earnings using the "core" and "adjusted" labels with a prominent reconciliation.[23]

After reading the investor bulletin and correctly answering a comprehension check question, participants receive the Q4 earnings release from the same technology firm as in

[23] To hold information constant, I provide all participants with a detailed income statement that includes the non-GAAP reconciling item.

E1. However, unlike E1 where participants must choose to access the reconciliation from GAAP income to non-GAAP income, in E2 the reconciliation is prominently presented to all participants in the "core" and "adjusted" conditions. Importantly, this design allows me to test whether awareness of managerial discretion causes investors to react favorably to transparency in non-GAAP reporting regardless of the non-GAAP label, or if the non-GAAP label is the key determinant of perceived transparency. Specifically, this design tests if investors react positively to firms who report non-GAAP earnings in a transparent manner even if the label does not match the persistence of the non-GAAP earnings, or alternatively if investors react negatively to firms who mislabel non-GAAP earnings even if the calculation of non-GAAP earnings is prominently disclosed.[24] If awareness of discretion causes investors to react positively to more transparent non-GAAP reporting, willingness to invest will be higher in both "core" and "adjusted" conditions than in the control condition. On the other hand, if these investors react negatively to firms who mislabel non-GAAP earnings regardless of the overall transparency of the non-GAAP disclosure package, then willingness to invest will be lower for the "core" label than for the "adjusted" label (and potentially also lower than the control condition).

I again recruit MBA participants for E2. Participants are 82 working professionals enrolled in an MBA program at the same highly-rated public university from which E1

[24] In E1, high awareness of discretion caused participants to be equally likely to access the reconciliation in both label conditions. Thus, providing everyone with the reconciliation in E2 does not change the relative information set available to participants in the two non-GAAP label conditions. Additionally, deviating from the more common case of non-adjacent reconciliations allows me to compare two types of transparency (transparency via label and via reconciliation placement), providing regulators with useful information about the potential effects of mandating prominent reconciliations.

participants were recruited. Participants are 31 years old on average and have an average of eight years of full-time work experience.

6.2 Results

Consistent with E1, I collect measures of the attractiveness of an investment in the firm, as well as participants' willingness to invest. I test for the internal reliability of the two measures ($\alpha = 0.93$), and combine the measures using an arithmetic average for my main measure of willingness to invest. Panel A of Table 6 presents descriptive statistics for willingness to invest, with statistical tests in Panels B and C. The one-way ANOVA in Panel B reveals a marginally significant effect of non-GAAP label on average willingness to invest ($F_{2,79} = 2.62$, $p = 0.08$). Graphical depictions of my results, presented in Figure 5, further clarify the pattern of results.

Compared to the control condition in which the firm does not report non-GAAP income, I find willingness to invest is greater when the firm reports non-GAAP income using *either* the "adjusted" or the "core" label (both $p < 0.06$). I also find willingness to invest does not differ across non-GAAP labels when the reconciliation is made more transparent ($t_{79} = 0.23$, $p = 0.82$). This pattern of results supports the explanation that awareness of managerial discretion causes investors to react positively to more transparent non-GAAP disclosures, *regardless of label*. Considered together with the results of Experiment One, it appears awareness of managerial discretion causes investors to value transparency in non-GAAP disclosures as a whole, and to react negatively only to firms who mislabel non-GAAP earnings when they perceive that the firm is trying to obfuscate.

Measures of the non-GAAP labels' appropriateness and forthcomingness also support the explanation that investors who have read regulatory guidance value overall transparency in non-GAAP reporting. I find no significant difference between investors' perceptions of the "core" and "adjusted" labels' appropriateness or forthcomingness in E2 (t_{81} = -0.81, p = 0.42 and t_{81} = -1.40, p = 0.17). When compared to the results of E1, in which judgments of the appropriateness between the two labels *did* differ, this suggests the "core" label is viewed as inappropriate in E1 because it is viewed as an attempt to mislead. In E2 however, greater transparency in the overall disclosure package means investors place less emphasis on the non-GAAP label specifically.[25]

Across both experiments, I find little evidence that investors who are aware of discretion in non-GAAP reporting react negatively to the "core" label. One explanation for this somewhat surprising result is my use of stock-based compensation as the expense item excluded from non-GAAP earnings in my experimental materials. Stock-based compensation is among the most commonly excluded expense items in non-GAAP earnings, and is often (inappropriately) ignored in valuation, even among professional analysts (Mohanram, White and Zhao, 2020). Therefore, excluding stock-based compensation from "core" earnings is unlikely to be punished by non-professional investors, even when it is excluded in multiple years.

Taken together with the results of E1, these findings indicate awareness of managerial discretion causes investors to react positively to firms who use more

[25] These findings also serve to alleviate concerns about demand effects related to my awareness manipulation. Specifically, if mention of labels as one avenue of discretion in the awareness manipulation caused differences in E1 due to a demand effect, labels should cause a difference in E2 as well.

transparent non-GAAP reporting practices. In a result that may be somewhat counterintuitive, this includes *less* diagnostic labeling that encourages investors to seek out additional non-GAAP information. E2 suggests that investors with higher awareness of managerial discretion also react favorably to non-GAAP earnings, regardless of label, when they are paired with more prominent disclosure of the reconciliation from non-GAAP income to GAAP income. These findings are consistent with prior experimental research on non-GAAP reporting, which demonstrates more sophisticated investors are more likely to rely on non-GAAP reporting when a reconciliation from non-GAAP income to GAAP income is displayed (Elliott, 2006). My findings provide preliminary evidence that awareness of managerial discretion is one potential explanation for this effect.

Chapter 7

Conclusion

In this study, I provide initial evidence on how the labeling of non-GAAP metrics influences non-professional investors' judgment and decision-making. I examine how non-GAAP labels affect investors' information processing and willingness to invest when their awareness of managerial discretion in non-GAAP reporting is both high and low, providing evidence on the importance of non-GAAP labels. I find that when awareness of discretion is low, investors are less likely to access the reconciliation from non-GAAP to GAAP income when the firm uses a more diagnostic label, specifically one that implies persistent non-GAAP earnings. This finding validates regulators' concerns about the potential for non-GAAP labels to mislead investors. I further find that when awareness of managerial discretion is low, investors are more willing to invest when non-GAAP earnings are labeled as "core" rather than "adjusted." Consistent with my theoretical predictions, this effect results from these investors using the non-GAAP label as a heuristic cue to assess the persistence of the non-GAAP measure when determining its effect on firm value. These findings provide evidence on one mechanism through which non-GAAP labels can affect investor judgments.

On the other hand, when awareness of discretion is high, I find no difference in investors' access of the non-GAAP to GAAP reconciliation. This finding is informative to regulators, as it provides evidence that efforts to educate investors about non-GAAP reporting are quite effective for those investors that read them. Beyond regulatory efforts, investors' awareness of managerial discretion in non-GAAP reporting may also be

increased by other factors, such as media attention or general investor sophistication. I also find that when awareness is high, investors are more willing to invest when non-GAAP earnings are labeled as "adjusted" rather than "core." Supplemental tests indicate this finding is consistent with investors using central route processing to engage in a deeper analysis of the non-GAAP measure. This includes considering both the non-GAAP label *and* non-GAAP reconciling items, and I find that investors with high awareness of discretion react positively to firms that report in a more transparent way by using a less diagnostic non-GAAP label. The value these investors place on transparent disclosures is confirmed in a second experiment, where I find investors with high awareness of discretion in non-GAAP reporting react positively when firms report higher non-GAAP income measures, *regardless of label,* as long as the firm is transparent in its non-GAAP reporting. This finding is informative to managers, who rarely present the non-GAAP reconciliation adjacent to the non-GAAP measure in practice, and are often criticized for a lack of transparency in non-GAAP reporting. In addition, these results suggest a more prominent reconciliation serves to undo the effect of labeling on investors' judgments, indicating mandating reconciliation prominence is a potential solution to misleading non-GAAP labels.

My findings are not without limitations. I focus on non-GAAP income measures, and specifically on the common setting where non-GAAP income is more positive than GAAP income. Future research could examine the role of non-GAAP labels with other non-GAAP measures, such as top-line revenues, as well as (less common) situations in which non-GAAP income is lower than GAAP income. In addition, I test the effect of non-

GAAP labels in the presence of a particular reconciling item (stock-based compensation expense). While an out-of-sample test indicates no difference in investors' perceptions of the appropriateness of several common reconciling items, it is possible reactions to non-GAAP labels could differ depending on the reconciling item used. Further, although the theoretical model I test is quite general, I operationalize differences in label diagnosticity with two labels ("core" and "adjusted") that differ in the extent to which they communicate persistent performance. Future research could examine the effects of other attributes of non-GAAP labels, such as familiarity or formality. Last, I examine the moderating effect of awareness of managerial discretion in non-GAAP reporting via an investor bulletin. Future research could examine other methods of increasing awareness of discretion, including media reports. Research could also test if my findings for high awareness investors generalize to more sophisticated investors, analysts, or other financial statement users.

Figure 1
Non-GAAP in Practice

Panel A: Non-GAAP Regulatory Timeline

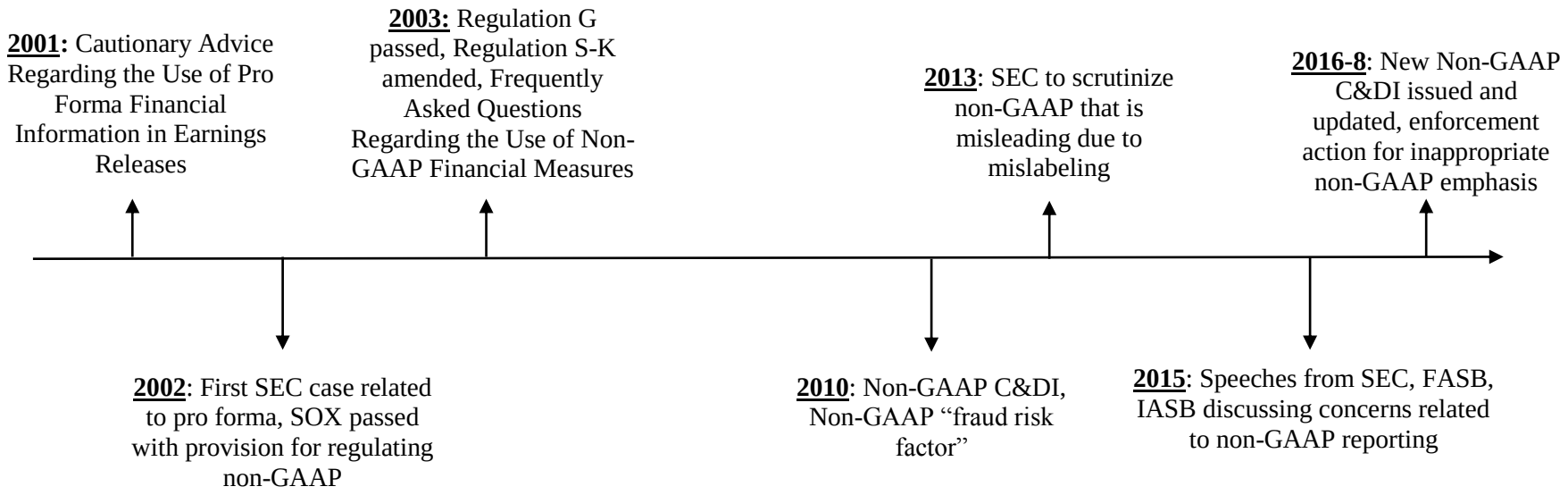
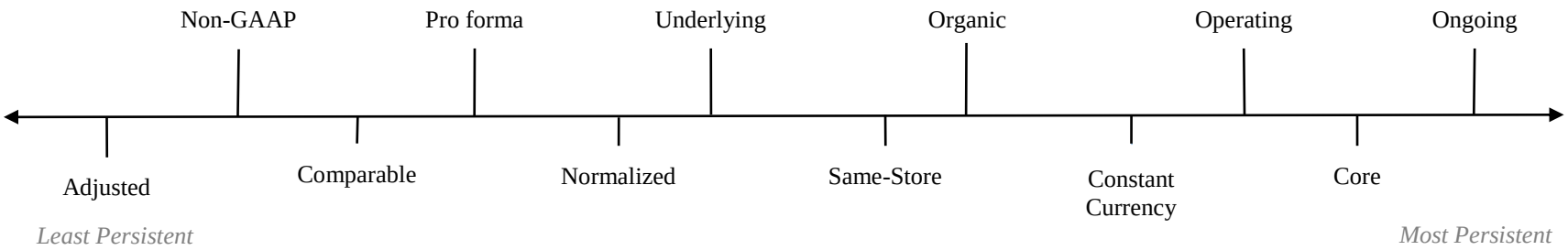


Figure 1, continued

Panel B: Perceived Persistence of Earnings with Non-GAAP Labels



Panel A presents a timeline of key regulatory events related to non-GAAP reporting. The SEC initially raised concern about the potential for non-GAAP measures to be misleading to investors in 2001. Following a seven-year gap, the SEC began once again to express concerns about non-GAAP reporting.

Panel B presents a figure depicting investors' perceptions of the persistence of non-GAAP earnings with twelve labels used in practice. The label least associated with persistent earnings is "adjusted," while the label most associated with persistent earnings is "ongoing."

Figure 2
Theoretical Model

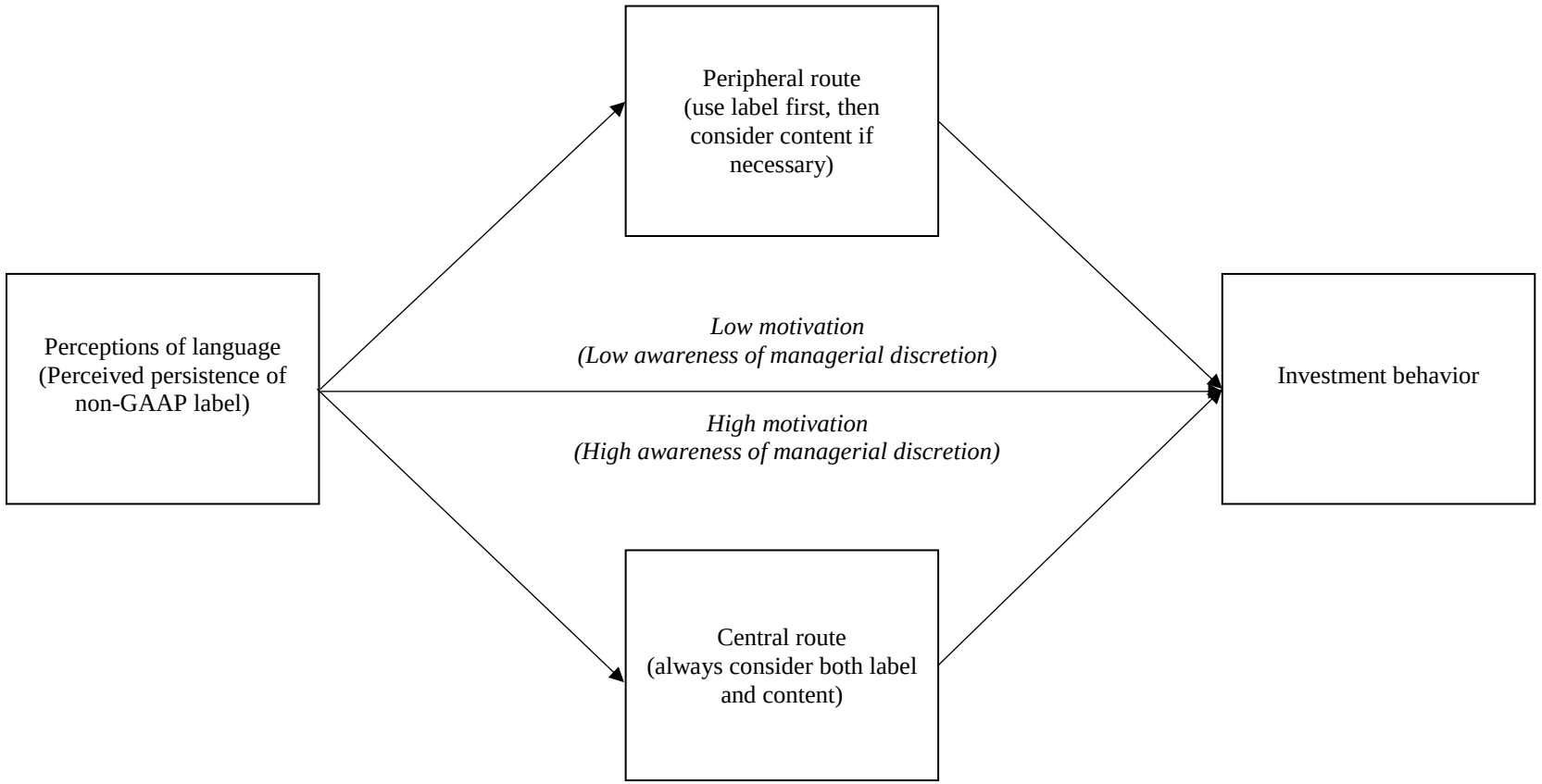
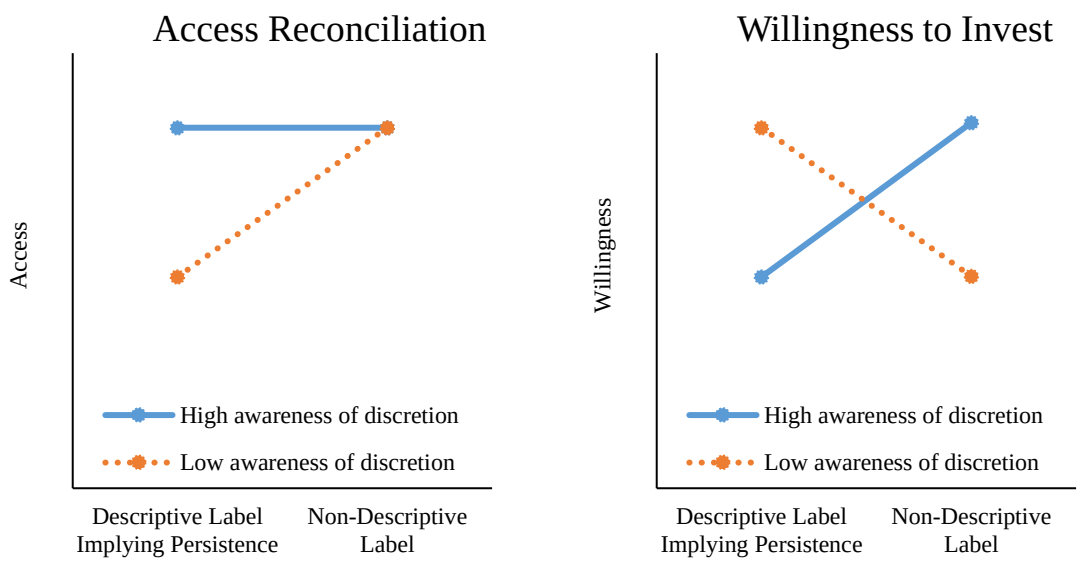


Figure 2 presents a graphical depiction of my theoretical model. Specifically, I predict when awareness of managerial discretion is low, investors will use peripheral route processing to evaluate the persistence of non-GAAP income via the non-GAAP label, which will ultimately affect their assessments of firm value. When awareness of managerial discretion is high, investors will utilize central route processing. This will involve considering the non-GAAP reconciliation and the non-GAAP label to arrive at their assessment of firm value via an assessment of management's credibility.

Figure 3
Graphed Predictions and Results

Panel A: Predictions



Panel B: Results

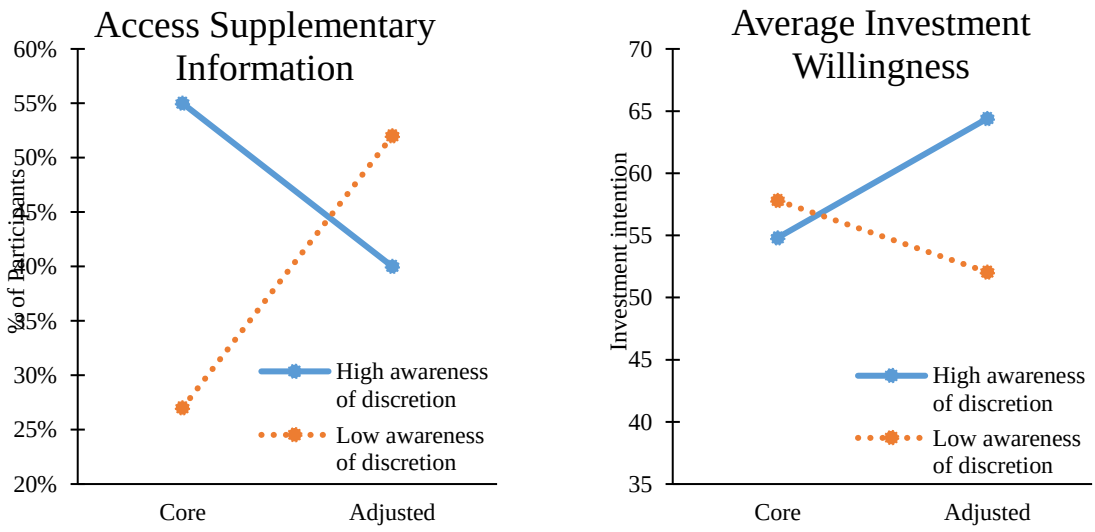


Figure 3 presents graphical depictions of my predictions and results for my primary dependent measures in Experiment One.

Access supplementary information: 0/1 coding for participant accessed (1) or did not access (0) the supplementary info with the reconciliation of non-GAAP income to GAAP income

Average willingness to invest: Arithmetic average of attractiveness and investment likelihood

Figure 4
Experiment 1: Statistical Process Model

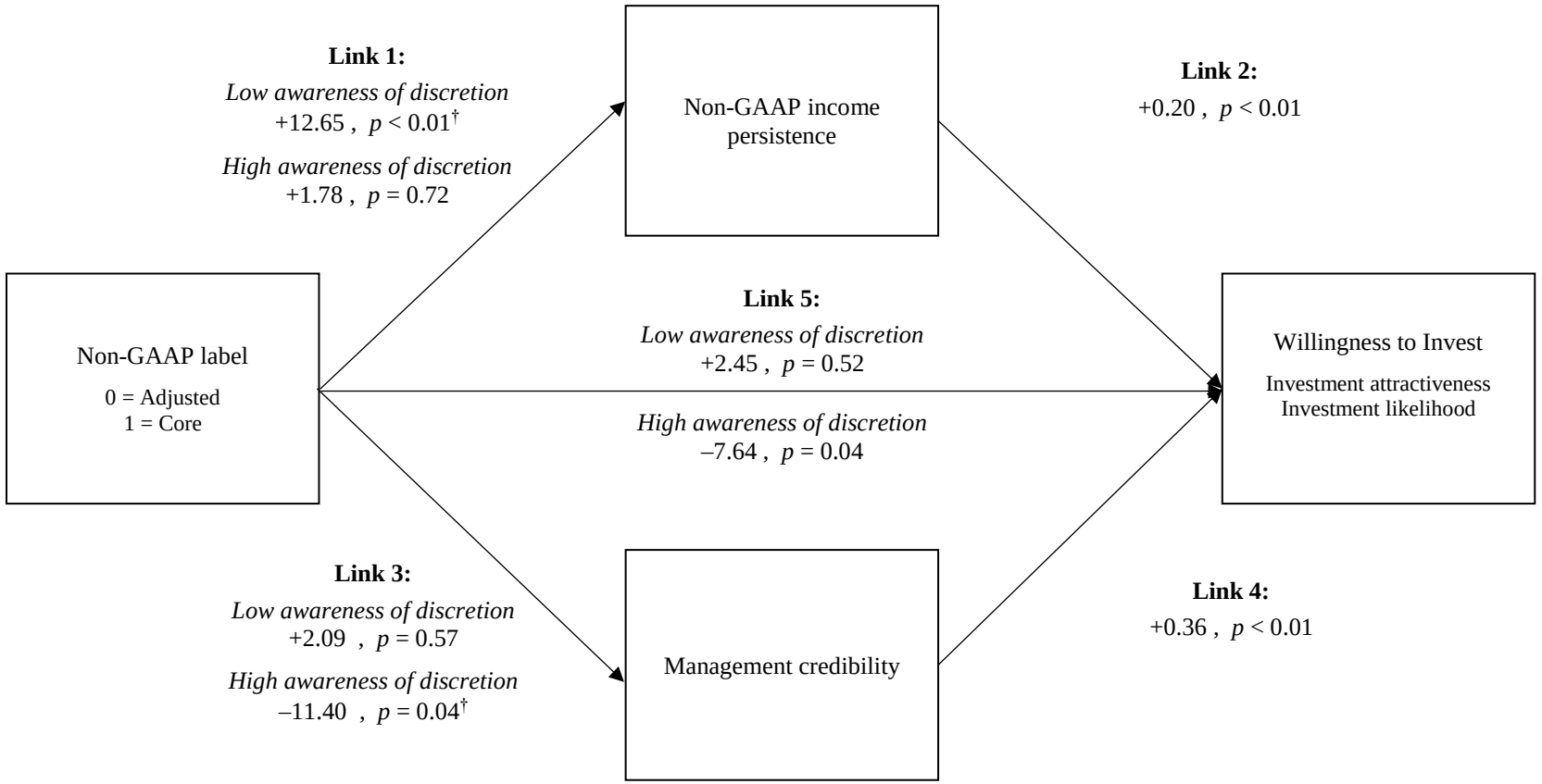


Figure 4 presents my process model, which was tested using SPSS PROCESS Model 8 (Hayes [2018]). Consistent with my predictions, I find perceived non-GAAP persistence mediates judgments of firm value for investors with low awareness of managerial discretion, and management credibility mediates judgments of firm value for investors with high awareness of managerial discretion. † indicates a one-tailed *p*-value for directional tests.

Figure 5
Experiment 2: Primary Dependent Measures Graphed Results

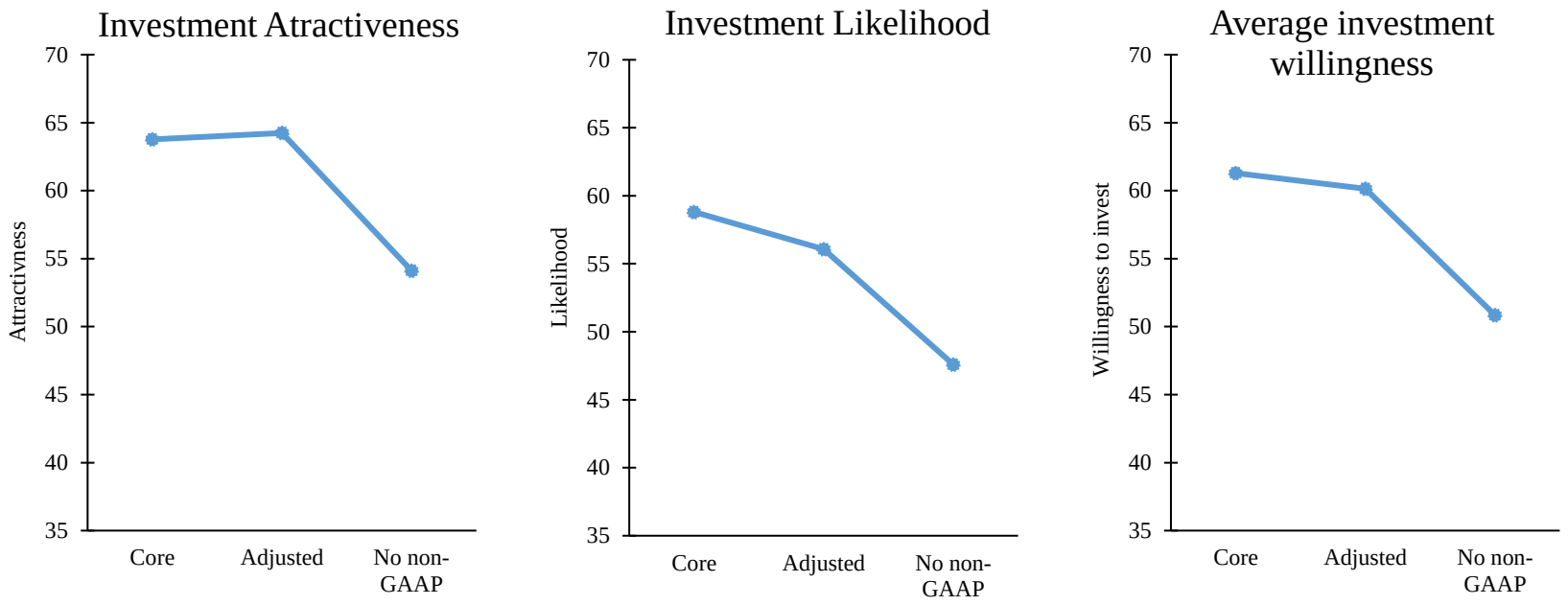


Figure 5 presents graphical depictions of results for my primary dependent measures in Experiment Two.

Investment attractiveness: How attractive is an investment in the Tech Company's stock? (0=not at all attractive, 100=very attractive)

Investment likelihood: How likely are you to invest in the Tech Company's stock? (0= not at all likely, 100= very likely)

Average willingness to invest: Arithmetic average of attractiveness and investment likelihood

Table 1
Frequency and Perceived Persistence of Non-GAAP Labels in Practice

Term	Number of times used	Perceived persistence
Adjusted	246	-19.84
Non-GAAP	118	-5.29
Operating	41	30.00
Constant Currency	39	18.84
Core	23	31.03
Organic	21	14.38
Comparable	18	-2.99
Underlying	5	9.06
Same-store	4	11.81
Ongoing	4	42.84
Normalized	3	0.46
Pro forma	3	0.19
Other	24	
No Non-GAAP metric	79	

Table 1 provides the total number of S&P 500 firms that used each term to label their 2016 Q4 earnings metrics, as well as details from my survey of investor perceptions of non-GAAP labels.

The 'other' category includes the industry specific term "FFO," as well as labels that were used by only one firm, including: "managed," "guidance basis," "historical basis," "economic," "before changes/gains," "modified," and several tax-related labels. Some firms used more than one label; as such, the total is greater than 500.

In the survey, participants were asked to assess the extent to which each label conveyed persistence on a 101-point scale from -50 to +50 where -50 (+50) was labeled "temporary" ("ongoing").

Table 2
Experiment 1: Predictions and Results

	Prediction	Finding	Supported?
Reconciliation Access			
Low Awareness of Discretion	Persistent < Not persistent	"Core" < "Adjusted"	Yes
High Awareness of Discretion	Persistent = Not persistent	"Core" = "Adjusted"	Yes
Willingness to Invest			
Low Awareness of Discretion	Persistent > Not persistent	"Core" > "Adjusted"	Yes
High Awareness of Discretion	Persistent < Not persistent	"Core" < "Adjusted"	Yes
Non-GAAP Income Persistence			
Low Awareness of Discretion	Persistent > Not persistent	"Core" > "Adjusted"	Yes
Management Credibility			
High Awareness of Discretion	Persistent < Not persistent	"Core" < "Adjusted"	Yes

Table 2 provides details on my predictions and findings for Experiment 1.

Table 3
Experiment 1: Access Supplementary Information

Panel A: Descriptive statistics—Mean for access of supplementary information

	Access supplementary information	
	Core	**Adjusted**
Low awareness of discretion	0.27 n=30	0.52 n=29
High awareness of discretion	0.55 n=31	0.40 n=30
Column means	0.41 n=61	0.46 n=59

Panel B: Categorical model

	Access supplementary information	
	χ^2	*p*-value
Non-GAAP label	0.40	0.53
Awareness of discretion	0.93	0.34
Label × Awareness	4.89	0.03

Panel C: Simple main effects tests

	Access supplementary information	
	χ^2	*p*-value
Label given high awareness	1.35	0.25
Label given low awareness	3.89	0.04
Awareness given "core"	5.00	0.03
Awareness given "adjusted"	0.82	0.37

Panel A presents descriptive statistics for reconciliation access where 0 (1) indicates a participant did not (did) access the supplementary information including the reconciliation from GAAP income to non-GAAP income. Panel B provides the Analysis of Variance for each of these measures, with simple main effects in Panel C.

Table 4
Experiment 1: Willingness to Invest

Panel A: Descriptive Statistics—Mean (std dev) for willingness to invest measures

	Investment attractiveness		Investment likelihood		Average willingness to invest	
	Core	**Adjusted**	**Core**	**Adjusted**	**Core**	**Adjusted**
Low awareness of discretion	60.97 (16.03) n=30	55.83 (15.75) n=29	54.63 (16.39) n=30	48.28 (19.55) n=29	57.80 (15.19) n=30	52.05 (16.38) n=29
High awareness of discretion	57.74 (16.61) n=31	67.47 (15.30) n=30	51.87 (22.95) n=31	61.33 (15.42) n=30	54.81 (17.87) n=31	64.40 (14.26) n=30
Column means	59.33 (16.27) n=61	61.75 (16.47) n=59	53.23 (19.88) n=61	54.92 (18.62) n=59	56.28 (16.53) n=61	58.33 (16.43) n=59

Panel B: Analysis of variance

	Investment attractiveness		Investment likelihood		Average willingness to invest	
	F-stat	*p*-value	*F*-stat	*p*-value	*F*-stat	*p*-value
Non-GAAP label	0.62	0.43	0.20	0.65	0.43	0.51
Awareness of discretion	2.09	0.15	2.24	0.14	2.56	0.11
Label × Awareness	6.52	0.01	5.28	0.02	3.30	0.01

Panel C: Simple main effects tests

	Investment attractiveness		Investment likelihood		Average willingness to invest	
	t-stat	*p*-value	*t*-stat	*p*-value	*t*-stat	*p*-value
Label given high awareness	-2.38	0.01†	-1.96	0.03†	-2.34	0.01†
Label given low awareness	1.24	0.11†	1.30	0.10†	1.38	0.09†
Awareness given "core"	-0.79	0.43	-0.57	0.57	-0.73	0.47
Awareness given "adjusted"	2.81	0.01	2.67	0.01	2.97	<0.01

Panel A presents descriptive statistics for willingness to invest measures, measured on 101-point scales. Panel B provides ANOVAs, with simple main effects in Panel C. † indicates a one-tailed p-value for directional tests.

Table 5
Experiment 1: Process Measures

Panel A: Descriptive statistics—Mean (std dev) for process measures

	Non-GAAP persistence		Management credibility	
	Core	**Adjusted**	**Core**	**Adjusted**
Low awareness of discretion	60.23 (17.94) n=30	47.59 (17.99) n=29	54.33 (11.70) n=30	52.24 (12.82) n=29
High awareness of discretion	58.52 (20.82) n=31	56.73 (19.83) n=30	55.52 (15.52) n=31	61.93 (16.28) n=30
Column means	59.36 (19.31) n=61	52.24 (19.35) n=59	54.93 (13.67) n=61	57.17 (15.34) n=59

Panel B: Analysis of variance

	Non-GAAP persistence		Management credibility	
	F-stat	*p*-value	*F*-stat	*p*-value
Non-GAAP label	4.23	0.04	4.38	0.04
Awareness of discretion	1.12	0.29	0.69	0.41
Label × Awareness	2.40	0.12	2.68	0.10

Panel C: Simple Main Effects Tests

	Non-GAAP persistence		Management credibility	
	t-stat	*p*-value	*t*-stat	*p*-value
Label given high awareness	0.36	0.72	3.10	0.04†
Label given low awareness	2.53	<0.01†	0.32	0.57
Awareness given "core"	-0.35	0.73	0.11	0.75
Awareness given "adjusted"	1.83	0.07	6.84	0.01

Panel A presents descriptive statistics for process measures. Panel B provides ANOVA's, with simple main effects in Panel C. † indicates a one-tailed p-value for directional tests.

Table 6
Experiment 2: Willingness to Invest

Panel A: Descriptive Statistics—Mean (std dev) for willingness to invest measures

	Investment attractiveness	**Investment likelihood**	**Average willingness to invest**
"Core"	63.77 (16.35) n=26	58.81 (23.10) n=26	61.29 (19.18) n=26
"Adjusted"	64.24 (17.59) n=29	56.07 (18.68) n=29	60.15 (17.52) n=29
No non-GAAP measure	54.11 (18.44) n=27	47.59 (19.84) n=27	50.85 (18.50) n=27
Column means	60.76 (17.91) n=82	54.15 (20.84) n=82	57.45 (18.75) n=82

Panel B: Analysis of variance

	Investment attractiveness		**Investment likelihood**		**Average willingness to invest**	
	F-stat	*p*-value	*F*-stat	*p*-value	*F*-stat	*p*-value
Non-GAAP label	2.91	0.06	2.17	0.12	2.62	0.08

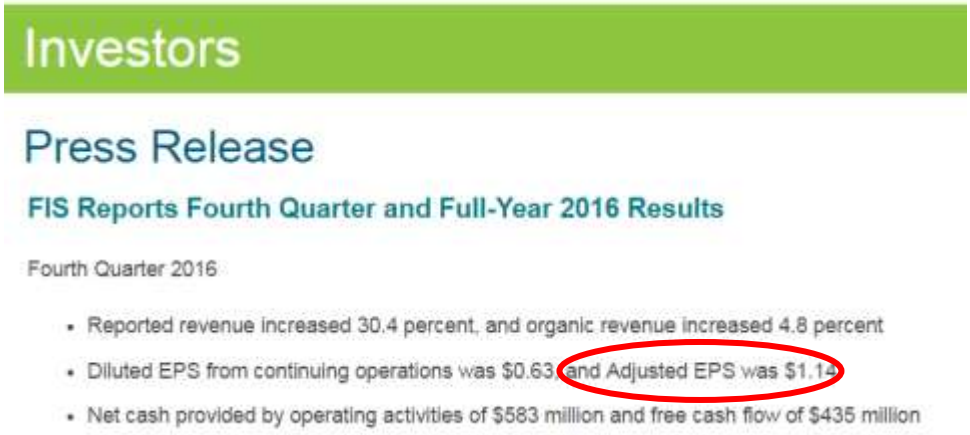
Panel C: Simple main effects tests

	Investment attractiveness		**Investment likelihood**		**Average willingness to invest**	
	t-stat	*p*-value	*t*-stat	*p*-value	*t*-stat	*p*-value
"Core" versus "Adjusted"	0.10	0.92	0.49	0.62	0.23	0.82
"Core" versus no non-GAAP	2.01	0.05	1.99	0.05	2.07	0.04
"Adjusted" versus no non-GAAP	2.16	0.03	1.54	0.13	1.89	0.06

Panel A presents descriptive statistics for willingness to invest measures, measured on 101-point scales.
Panel B provides ANOVAs, with simple main effects in Panel C.

Appendix A
Non-GAAP Label Examples

Panel A: Fidelity Information Services 2016 Q4 Earnings Release Abstract – "Adjusted" Label



Investors

Press Release

FIS Reports Fourth Quarter and Full-Year 2016 Results

Fourth Quarter 2016

- Reported revenue increased 30.4 percent, and organic revenue increased 4.8 percent
- Diluted EPS from continuing operations was $0.63 and Adjusted EPS was $1.14
- Net cash provided by operating activities of $583 million and free cash flow of $435 million

Panel B: Alliance Data 2016 Q4 Earnings Release Abstract – "Core" Label

Alliance Data Reports Full-Year 2016 Results

Alliance Data Reports Full-Year 2016 Results

Jan 26, 2017

- Revenue Increases 11 Percent to $7.1 Billion
- EPS Decreases 17 Percent to $7.34
-- Both Were Reduced by $242 Million Charge Due to Expiry Cancellation
- Core EPS Increases 12 Percent to $16.92
- Quarterly Dividend Declared

Notes: FIS and Alliance Data designate one another as key competitors in their 10K and share the same 4-digit SIC code. FIS utilizes the "adjusted" label, while Alliance utilizes the "core" label for non-GAAP earnings.

Appendix B
SEC Comment Letter Examples

Electronics for Imaging Inc, 2009: We also note your reference to core operating results in your discussion of non-GAAP disclosures. If you intend to use this terminology in your future filings ensure that it is adequately defined and that you have fully explained how you determine that the excluded items are not representative of your core operations.

Dime Community Bancshares, 2010: The title of core earnings does not appear appropriate in light of the fact that most of the adjustments you are making to exclude from core earnings are directly related to the on-going operations of a bank…Please revise your title accordingly to more accurately reflect the nature of this measure.

Dow Chemical, 2011: It appears to us that your titles of these non-GAAP measures are potentially confusing and that your current footnote designation is not transparent. Please appropriately title each non-GAAP measure so that the title clearly and adequately conveys what the measure actually represents.

BJ's Restaurants Inc, 2011: For greater clarity please revise the titles of your non-GAAP financial measures from non-GAAP net income and non-GAAP basic net income per share to adjusted net income or non-GAAP adjusted net income.

Bancorp, Inc 2011: Please revise your future filings to change the name of your non-GAAP measure to more accurately reflect its content…we believe it would be appropriate to use a more descriptive title to describe this non-GAAP measure.

Appendix C
Experimental Materials

EXPERIMENT 1

Non-GAAP Primary Experiment MBA

Please enter your participant number as it appears on your welcome sheet.

_____

Note: Participants were randomly assigned a number at the start of the experiment. This number was used to track participant access of the non-GAAP reconciliation.

Thank you for participating in this study. The purpose of the study is to examine how individuals make investment judgments and decisions. Your participation today will take approximately 10 minutes. The information included in the case is not intended to be completely representative of what would normally be available when you evaluate a company. Providing you with that level of detail would require more time to complete the case than could realistically be expected. Please make the best judgments you can based on the information provided in these materials.
When you have completed the study, copy down your completion code and exit the room to receive your payment.

Page Break

INVESTOR EDUCATION EFFORTS CONDITIONS

As an investor, you read the following bulletin from the SEC:

Non-GAAP earnings are measures that include or exclude amounts that earnings presented under US GAAP (Generally Accepted Accounting Principles) do not.

Non-GAAP earnings can provide useful information about company performance. However, companies have substantial discretion over non-GAAP earnings. In particular:

- There is considerable variation in the way non-GAAP earnings are calculated.
- There is considerable variation in the labeling of non-GAAP measures.

Which of the following is true about non-GAAP earnings? Select all that apply.

- [ ] There is considerable variation in the calculation and labeling of non-GAAP earnings.
- [ ] Manager's have no discretion in the calculation of non-GAAP earnings.
- [ ] Non-GAAP earnings measures deviate from US GAAP (Generally Accepted Accounting Principles).
- [ ] Non-GAAP measures are never useful.

Page Break

Note: Participants were required to correctly answer this question before moving forward.

"CORE" CONDITIONS

Assume that the year 2XX2 has just ended, and you are considering investing in The Tech Company. You find the following information:

The Tech Company announces net income growth of 5% and core income growth of 9% in 2XX2.

The Tech Company today announced the following 2XX2 year end results:

- **Net income**: up 5% to $510 million, diluted earnings per share $0.39
- **Core income**: up 9% to $650 million, core earnings per share $0.50

"The Tech Company is seeing significant growth as represented by our core income results, and we're well positioned to reach new opportunities in the year ahead" said John Smith, chief executive officer at The Tech Company.

Supplemental information can be found here: Supplemental Information.

Note: "Supplemental Information" linked to a new tab. Information included in this new tab is presented later in the materials.

You also learn that most other firms in this industry had an earnings growth rate for 2XX2 of 5%.

Based on this information, respond to the following questions.

How attractive is an investment in the Tech Company's stock?

Not at all attractive Very attractive

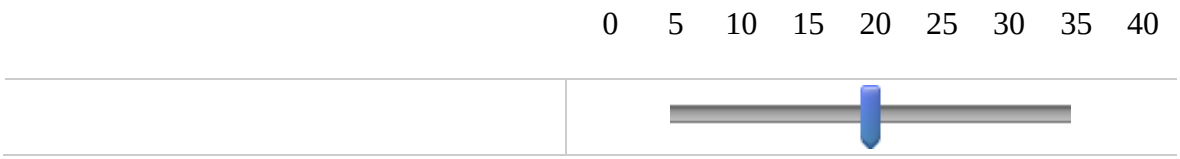
0 10 20 30 40 50 60 70 80 90 100

How likely are you to invest in the Tech Company's stock?

Not at all likely Very likely

0 10 20 30 40 50 60 70 80 90 100

To determine a fair price for The Tech Company's shares, you think about what The Tech Company's price-earnings (P/E) multiple should be. A lower multiple means you wouldn't be willing to pay much for each dollar of earnings, and a higher multiple means you would be willing to pay more for each dollar of earnings. In other words, the higher the multiple, the higher you value The Tech Company's shares. In determining the P/E multiple for The Tech Company, assume that the industry average is 20, and most other firms in this industry trade at multiples between 10 and 30 times earnings. Provide your P/E multiple for The Tech Company using the slider below.



Page Break

Which income metrics did The Tech Company present?

- ○ Net income and adjusted income
- ○ Net income and core income

Page Break

Persistent earnings are earnings that you expect to continue year after year.

How persistent do you think The Tech Company's net income is?

Not at all persistent Very persistent

0 10 20 30 40 50 60 70 80 90 100

How persistent do you think The Tech Company's core income is?

Not at all persistent Very persistent

0 10 20 30 40 50 60 70 80 90 100

Page Break

How appropriate do you think The Tech Company's use of the label "core" for its non-GAAP earnings measure **is?**

Not at all appropriate Very appropriate

0 10 20 30 40 50 60 70 80 90 100

How competent do you think The Tech Company's management is?

Not at all competent Very competent

0 10 20 30 40 50 60 70 80 90 100

How <u>trustworthy</u> do you think The Tech Company's management is?

Not at all trustworthy Very trustworthy

0 10 20 30 40 50 60 70 80 90 100

"ADJUSTED" CONDITIONS

Assume that the year 2XX2 has just ended, and you are considering investing in The Tech Company. You find the following information:

The Tech Company announces net income growth of 5% and adjusted income growth of 9% in 2XX2.

The Tech Company today announced the following 2XX2 year end results:

- **Net income**: up 5% to $510 million, diluted earnings per share $0.39
- **Adjusted income**: up 9% to $650 million, adjusted earnings per share $0.50

"The Tech Company is seeing significant growth as represented by our adjusted income results, and we're well positioned to reach new opportunities in the year ahead" said John Smith, chief executive officer at The Tech Company.

Supplemental information can be found here: Supplemental Information.

Note: "Supplemental Information" linked to a new tab. Information included in this new is presented later in the materials.

You also learn that most other firms in this industry had an earnings growth rate for 2XX2 of 5%.
Based on this information, respond to the following questions.

How attractive is an investment in the Tech Company's stock?

Not at all attractive Very attractive

0 10 20 30 40 50 60 70 80 90 100

How likely are you to invest in the Tech Company's stock?

Not at all likely Very likely

0 10 20 30 40 50 60 70 80 90 100

To determine a fair price for The Tech Company's shares, you think about what The Tech Company's price-earnings (P/E) multiple should be. A lower multiple means you wouldn't be willing to pay much for each dollar of earnings, and a higher multiple means you would be willing to pay more for each dollar of earnings. In other words, the higher the multiple, the higher you value The Tech Company's shares. In determining the P/E multiple for The Tech Company, assume that the industry average is 20, and most other firms in this industry trade at multiples between 10 and 30 times earnings. Provide your P/E multiple for The Tech Company using the slider below.

0 5 10 15 20 25 30 35 40

Page Break

Which income metrics did The Tech Company present?

- ○ Net income and adjusted income
- ○ Net income and core income

Page Break

Persistent earnings are earnings that you expect to continue year after year.

How persistent do you think The Tech Company's net income is?

Not at all persistent Very persistent

0 10 20 30 40 50 60 70 80 90 100

How persistent do you think The Tech Company's adjusted income is?

Not at all persistent Very persistent

0 10 20 30 40 50 60 70 80 90 100

Page Break

How appropriate do you think The Tech Company's use of the label "adjusted" for its non-GAAP earnings measure **is?**

Not at all appropriate Very appropriate

0 10 20 30 40 50 60 70 80 90 100

How competent do you think The Tech Company's management is?

Not at all competent Very competent

0 10 20 30 40 50 60 70 80 90 100

How <u>trustworthy</u> do you think The Tech Company's management is?

Not at all trustworthy Very trustworthy

0 10 20 30 40 50 60 70 80 90 100

E1 SUPPLEMENTAL INFO FOR "CORE" CONDITIONS

Non-GAAP - supplemental info CORE - MBA

Start of Block: Default Question Block

Please enter your participant number as it appears on your welcome sheet.

_____

Page Break

Note: Participants were randomly assigned a number at the start of the experiment. This number was entered at the start of the experiment and upon clicking the "Supplemental Information" link to track access of the non-GAAP reconciliation.

Click the buttons to view the Tables.

- ○ Table 1
- ○ Table 2

Display This Question:

If Click the buttons to view the Tables. = Table 1

Table 1: Summary Financial Results:

	2XX1	2XX2
Net Income	$486M	$510M
Earnings per Share	$0.37	$0.39
Core Income	$596M	$650M
Core Earnings per Share	$0.46	$0.50

Display This Question:

If Click the buttons to view the Tables. = Table 2

Table 2: Reconciliation of GAAP net income to core income (non-GAAP)

	2XX1	2XX2
GAAP net income	$486M	$510M
Add back: Stock-Based Compensation Expense	$110M	$140M
Core Income (Non-GAAP)	$596M	$650M

Page Break

E1 SUPPLEMENTAL INFO FOR "ADJUSTED" CONDITIONS

Non-GAAP - supplemental info
ADJUSTED - MBA

Start of Block: Default Question Block

Please enter your participant number as it appears on your welcome sheet.

_____

Page Break

Click the buttons to view the Tables.

- ○ Table 1
- ○ Table 2

Display This Question:

If Click the buttons to view the Tables. = Table 1

Table 1: Summary Financial Results

	2XX1	2XX2
Net Income	$486M	$510M
Earnings per Share	$0.37	$0.39
Adjusted Income	$596M	$650M
Adjusted Earnings per Share	$0.46	$0.50

Display This Question:

If Click the buttons to view the Tables. = Table 2

Table 2: Reconciliation of GAAP net income to adjusted income (non-GAAP)

	2XX1	2XX2
GAAP net income	$486M	$510M
Add back: Stock-Based Compensation Expense	$110M	$140M
Adjusted Income (Non-GAAP)	$596M	$650M

Page Break

EXPERIMENT 2

Non-GAAP E2 MBA

Thank you for participating in this study. The purpose of the study is to examine how individuals make investment judgments and decisions. Your participation today will take approximately 10 minutes. The information included in the case is not intended to be completely representative of what would normally be available when you evaluate a company. Providing you with that level of detail would require more time to complete the case than could realistically be expected. Please make the best judgments you can based on the information provided in these materials.

Page Break

INVESTOR EDUCATION PROVIDED TO ALL PARTICIPANTS

As an investor, you read the following bulletin from the SEC:
Non-GAAP earnings are measures that include or exclude amounts that earnings presented under US GAAP (Generally Accepted Accounting Principles) do not.
Non-GAAP earnings can provide useful information about company performance.
However, companies have substantial discretion over non-GAAP earnings. In particular:

- There is considerable variation in the way non-GAAP earnings are calculated.
- There is considerable variation in the labeling of non-GAAP measures.

Which of the following is true about non-GAAP earnings? Select all that apply.

- [ ] There is considerable variation in the calculation and labeling of non-GAAP earnings.
- [ ] Manager's have no discretion in the calculation of non-GAAP earnings.
- [ ] Non-GAAP earnings measures deviate from US GAAP (Generally Accepted Accounting Principles).
- [ ] Non-GAAP measures are never useful.

Note: Participants were required to correctly answer this question before moving forward.

Page Break

"CORE" CONDITION

Assume that the year 2XX2 has just ended, and you are considering investing in The Tech Company. You find the following information:

The Tech Company announces net income growth of 5% and core income growth of 9% in 2XX2.

The Tech Company today announced the following 2XX2 year end results:

- **Net income**: up 5% to $510 million, diluted earnings per share $0.39
- **Core income**: up 9% to $650 million, core earnings per share $0.50

"The Tech Company is seeing significant growth as represented by our core income results, and we're well positioned to reach new opportunities in the year ahead" said John Smith, chief executive officer at The Tech Company.

Table 1: Summary Financial Results:

	2XX1	2XX2
Revenue	$2,150M	$2,285M
Cost of Revenue	$935M	$990M
Gross Profit	$1,215M	$1,295M
Other Expenses:		
Research and Development	$216M	$226M
Selling, General and Administrative	$296M	$308M
Stock-Based Compensation	$110M	$140M
Income Tax	$107M	$111M
Total Other Expenses	$729M	$785M
Net Income	$486M	$510M
Earnings per Share	$0.37	$0.39

Table 2: Reconciliation of GAAP net income to core income (in millions):

	2XX1	2XX2
GAAP net income	$486	$510
Add back:		
Stock-Based Compensation Expense	$110	$140
Core income	$596	$650

You also learn that most other firms in this industry had an earnings growth rate for 2XX2 of 5%.
Based on this information, respond to the following questions.

How attractive is an investment in the Tech Company's stock?

Not at all attractive Very attractive

0 10 20 30 40 50 60 70 80 90 100

How likely are you to invest in the Tech Company's stock?

Not at all likely Very likely

0 10 20 30 40 50 60 70 80 90 100

Page Break

THE CASE INFORMATION IS REPEATED BELOW FOR YOUR REFERENCE.

The Tech Company announces net income growth of 5% and core income growth of 9% in 2XX2.

The Tech Company today announced the following 2XX2 year end results:

- **Net income**: up 5% to $510 million, diluted earnings per share $0.39
- **Core income**: up 9% to $650 million, core earnings per share $0.50

"The Tech Company is seeing significant growth as represented by our core income results, and we're well positioned to reach new opportunities in the year ahead" said John Smith, chief executive officer at The Tech Company.

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Net Income	$486M	$510M
Earnings per Share	$0.37	$0.39

Table 2: Reconciliation of GAAP net income to core income (in millions):

	2XX1	2XX2
GAAP net income	$486	$510
Add back:		
Stock-Based Compensation Expense	$110	$140
Core income	$596	$650

How <u>appropriate</u> do you think The Tech Company's use of the label "core" for its non-GAAP earnings measure **is?**

Not at all appropriate Very appropriate

0 10 20 30 40 50 60 70 80 90 100

How <u>forthcoming</u> do you think The Tech Company's use of the label "core" for its non-GAAP earnings measure **is?**

Not at all forthcoming Very forthcoming

0 10 20 30 40 50 60 70 80 90 100

Page Break

Which income metrics did The Tech Company present?

- ○ Net income and adjusted income
- ○ Net income and core income
- ○ Net income only

NO NON-GAAP MEASURE CONDITION

Assume that the year 2XX2 has just ended, and you are considering investing in The Tech Company. You find the following information:

The Tech Company announces net income growth of 5% in 2XX2.
The Tech Company today announced the following 2XX2 year end results:

- **Net income**: up 5% to $510 million, diluted earnings per share $0.39

"The Tech Company is seeing significant growth, and we're well positioned to reach new opportunities in the year ahead" said John Smith, chief executive officer at The Tech Company.

Table 1: Summary Financial Results:

	2XX1	2XX2
Revenue	$2,150M	$2,285M
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Gross Profit	$1,215M	$1,295M
Other Expenses:		
Research and Development	$216M	$226M
Selling, General and Administrative	$296M	$308M
Stock-Based Compensation	$110M	$140M
Income Tax	$107M	$111M
Total Other Expenses	$729M	$785M
Net Income	$486M	$510M
Earnings per Share	$0.37	$0.39

You also learn that most other firms in this industry had an earnings growth rate for 2XX2 of 5%, and that The Tech Company does not report a non-GAAP earnings

measure.
Based on this information, respond to the following questions.

How attractive is an investment in the Tech Company's stock?

Not at all attractive Very attractive

0 10 20 30 40 50 60 70 80 90 100

How likely are you to invest in the Tech Company's stock?

Not at all likely Very likely

0 10 20 30 40 50 60 70 80 90 100

Page Break

Which income metrics did The Tech Company present?

- ○ Net income and adjusted income
- ○ Net income and core income
- ○ Net income only

"ADJUSTED" CONDITION

Assume that the year 2XX2 has just ended, and you are considering investing in The Tech Company. You find the following information:

The Tech Company announces net income growth of 5% and adjusted income growth of 9% in 2XX2.

The Tech Company today announced the following 2XX2 year end results:

- **Net income**: up 5% to $510 million, diluted earnings per share $0.39
- **Adjusted income**: up 9% to $650 million, core earnings per share $0.50

"The Tech Company is seeing significant growth as represented by our adjusted income results, and we're well positioned to reach new opportunities in the year ahead" said John Smith, chief executive officer at The Tech Company.

Table 1: Summary Financial Results:

	2XX1	2XX2
Revenue	$2,150M	$2,285M
Cost of Revenue	$935M	$990M
Gross Profit	$1,215M	$1,295M
Other Expenses:		
Research and Development	$216M	$226M
Selling, General and Administrative	$296M	$308M
Stock-Based Compensation	$110M	$140M
Income Tax	$107M	$111M
Total Other Expenses	$729M	$785M
Net Income	$486M	$510M
Earnings per Share	$0.37	$0.39

Table 2: Reconciliation of GAAP net income to adjusted income (in millions):

	2XX1	2XX2
GAAP net income	$486	$510
Add back:		
Stock-Based Compensation Expense	$110	$140
Adjusted income	$596	$650

You also learn that most other firms in this industry had an earnings growth rate for 2XX2 of 5%.
Based on this information, respond to the following questions.

How attractive is an investment in the Tech Company's stock?

Not at all attractive Very attractive

0 10 20 30 40 50 60 70 80 90 100

How likely are you to invest in the Tech Company's stock?

Not at all likely Very likely

0 10 20 30 40 50 60 70 80 90 100

Page Break

THE CASE INFORMATION IS REPEATED BELOW FOR YOUR REFERENCE.

The Tech Company announces net income growth of 5% and adjusted income growth of 9% in 2XX2.

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Total Other Expenses	$729M	$785M
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Earnings per Share	$0.37	$0.39

Table 2: Reconciliation of GAAP net income to adjusted income (in millions):

	2XX1	2XX2
GAAP net income	$486	$510
Add back:		
Stock-Based Compensation Expense	$110	$140
Adjusted income	$596	$650

How <u>appropriate</u> do you think The Tech Company's use of the label "adjusted" for its non-GAAP earnings measure **is?**

Not at all appropriate Very appropriate

0 10 20 30 40 50 60 70 80 90 100

How <u>forthcoming</u> do you think The Tech Company's use of the label "adjusted" for its non-GAAP earnings measure **is?**

Not at all forthcoming Very forthcoming

0 10 20 30 40 50 60 70 80 90 100

Page Break

Which income metrics did The Tech Company present?

- ○ Net income and adjusted income
- ○ Net income and core income
- ○ Net income only

SUPPLEMENTAL ANALYSIS: LABEL PERCEPTIONS

Non-GAAP Labels similarity MBA

Thank you for participating in this study. The purpose of the study is to examine how individuals make investment judgments and decisions. Your participation today will take approximately 20 minutes.

Upon completion, you will receive a code to send to your instructor to receive extra credit.

In this section, you will be asked to compare pairs of words and determine how similar you feel the two words are. As an example, consider the following pair being used to describe an individual.

Note: The order of terms was randomized (both which term came first in the pair, and the order of the pairs).

Thoughtful : Helpful

Not at all similar Very similar

For this pair, you would likely judge the words to be very similar, and drag the slider to the right to indicate that the words are "Very similar".

Now, consider the following pair being used to describe an individual.

Friendly : Clumsy

Not at all similar Very similar

For this pair, you would likely judge the words to be not similar, and drag the slider to the right to indicate that the words are "Not at all similar".

Proceed to the following page to begin the task.

Following are several pairs of words that are used to describe earnings per share numbers by firms in 2016 earnings releases. For example, the word might be used in any of the following contexts or more:

- <<INSERT TERM>> EPS growth to $1.28
- <<INSERT TERM>> EPS was up 14% to $1.28
- EPS (<<INSERT TERM>>) for the year was $1.28

For each pair of words, rate how similar you feel the two words are.

Same-store : Underlying

Not at all similar Very similar

Recurring : Underlying

Not at all similar Very similar

Pro forma : Underlying

Not at all similar Very similar

Organic : Underlying

Not at all similar Very similar

Operating : Underlying

Not at all similar Very similar

Non-GAAP : Underlying

Not at all similar Very similar

The following joke is provided as a break from the task. Word pairs will resume on the following page.

What do you call monkeys that share an Amazon account?

Prime Mates

Progress update: You have completed 1 of 13 pages of comparisons.

The directions are repeated below for your reference.

Following are several pairs of words that are used to describe earnings per share numbers by firms in 2016 earnings releases. For example, the word might be used in any of the following contexts or more:

- <<INSERT TERM>> EPS growth to $1.28
- <<INSERT TERM>> EPS was up 14% to $1.28
- EPS (<<INSERT TERM>>) for the year was $1.28

For each pair of words, rate how similar you feel the two words are.

Ongoing : Underlying

Not at all similar Very similar

Normalized : Underlying

Not at all similar Very similar

Core : Underlying

Not at all similar Very similar

Constant currency : Underlying

Not at all similar Very similar

Comparable : Underlying

Not at all similar Very similar

Adjusted : Underlying

Not at all similar Very similar

The following joke is provided as a break from the task. Word pairs will resume on the following page.

Where do you go to learn about ice cream?

Sundae School

Progress update: You have completed 2 of 13 pages of comparisons.

The directions are repeated below for your reference.

Following are several pairs of words that are used to describe earnings per share numbers by firms in 2016 earnings releases. For example, the word might be used in any of the following contexts or more:

- <<INSERT TERM>> EPS growth to $1.28
- <<INSERT TERM>> EPS was up 14% to $1.28
- EPS (<<INSERT TERM>>) for the year was $1.28

For each pair of words, rate how similar you feel the two words are.

Recurring : Same-store

Not at all similar Very similar

Pro forma : Same-store

Not at all similar Very similar

Organic : Same-store

Not at all similar Very similar

Operating : Same-store

Not at all similar Very similar

Non-GAAP : Same-store

Not at all similar Very similar

Ongoing : Same-store

Not at all similar Very similar

The following joke is provided as a break from the task. Word pairs will resume on the following page.

Why don’t scientists trust atoms?

Because they make up everything

Progress update: You have completed 3 of 13 pages of comparisons.

The directions are repeated below for your reference.

Following are several pairs of words that are used to describe earnings per share numbers by firms in 2016 earnings releases. For example, the word might be used in any of the following contexts or more:

- <<INSERT TERM>> EPS growth to $1.28
- <<INSERT TERM>> EPS was up 14% to $1.28
- EPS (<<INSERT TERM>>) for the year was $1.28

For each pair of words, rate how similar you feel the two words are.

Normalized : Same-store

Not at all similar Very similar

Core : Same-store

Not at all similar Very similar

Constant currency : Same-store

Not at all similar Very similar

Comparable : Same-store

Not at all similar Very similar

Adjusted : Same-store

Not at all similar Very similar

Pro forma : Recurring

Not at all similar Very similar

The following joke is provided as a break from the task. Word pairs will resume on the following page.

What kind of exercise do lazy people do?

Diddly-squats

Progress update: You have completed 4 of 13 pages of comparisons.

The directions are repeated below for your reference.

Following are several pairs of words that are used to describe earnings per share numbers by firms in 2016 earnings releases. For example, the word might be used in any of the following contexts or more:

- <<INSERT TERM>> EPS growth to $1.28
- <<INSERT TERM>> EPS was up 14% to $1.28
- EPS (<<INSERT TERM>>) for the year was $1.28

For each pair of words, rate how similar you feel the two words are.

Operating : Recurring

Not at all similar Very similar

Organic : Recurring

Not at all similar Very similar

Non-GAAP : Recurring

Not at all similar Very similar

Ongoing : Recurring

Not at all similar Very similar

Normalized : Recurring

Not at all similar Very similar

Core : Recurring

Not at all similar Very similar

The following joke is provided as a break from the task. Word pairs will resume on the following page.

What do you call a pile of kittens?

A meowtain

Progress update: You have completed 5 of 13 pages of comparisons.

The directions are repeated below for your reference.

Following are several pairs of words that are used to describe earnings per share numbers by firms in 2016 earnings releases. For example, the word might be used in any of the following contexts or more:

- <<INSERT TERM>> EPS growth to $1.28
- <<INSERT TERM>> EPS was up 14% to $1.28
- EPS (<<INSERT TERM>>) for the year was $1.28

For each pair of words, rate how similar you feel the two words are.

Constant currency : Recurring

Not at all similar Very similar

Comparable : Recurring

Not at all similar Very similar

Adjusted : Recurring

Not at all similar Very similar

Organic : Pro forma

Not at all similar Very similar

Operating : Pro forma

Not at all similar Very similar

Non-GAAP : Pro forma

Not at all similar Very similar

The following joke is provided as a break from the task. Word pairs will resume on the following page.

What did the baby corn say to the mama corn?

Where’s Popcorn?

Progress update: You have completed 6 of 13 pages of comparisons.

The directions are repeated below for your reference.

Following are several pairs of words that are used to describe earnings per share numbers by firms in 2016 earnings releases. For example, the word might be used in any of the following contexts or more:

- <<INSERT TERM>> EPS growth to $1.28
- <<INSERT TERM>> EPS was up 14% to $1.28
- EPS (<<INSERT TERM>>) for the year was $1.28

For each pair of words, rate how similar you feel the two words are.

Ongoing : Pro forma

Not at all similar Very similar

Normalized : Pro forma

Not at all similar Very similar

Core : Pro forma

Not at all similar Very similar

Constant currency : Pro forma

Not at all similar Very similar

Comparable : Pro forma

Not at all similar Very similar

Adjusted : Pro forma

Not at all similar Very similar

The following joke is provided as a break from the task. Word pairs will resume on the following page.

What days are the strongest?

Saturday and Sunday, the rest are week days

Progress update: You have completed 7 of 13 pages of comparisons. Over half way done - keep up the great work!

The directions are repeated below for your reference.

Following are several pairs of words that are used to describe earnings per share numbers by firms in 2016 earnings releases. For example, the word might be used in any of the following contexts or more:

- <<INSERT TERM>> EPS growth to $1.28
- <<INSERT TERM>> EPS was up 14% to $1.28
- EPS (<<INSERT TERM>>) for the year was $1.28

For each pair of words, rate how similar you feel the two words are.

Operating : Organic

Not at all similar Very similar

Non-GAAP : Organic

Not at all similar Very similar

Ongoing : Organic

Not at all similar Very similar

Normalized : Organic

Not at all similar Very similar

Core : Organic

Not at all similar Very similar

Constant currency : Organic

Not at all similar Very similar

The following joke is provided as a break from the task. Word pairs will resume on the following page.

What do you call a snowman with a six-pack?

An abdominal snowman

Progress update: You have completed 8 of 13 pages of comparisons.

The directions are repeated below for your reference.

Following are several pairs of words that are used to describe earnings per share numbers by firms in 2016 earnings releases. For example, the word might be used in any of the following contexts or more:

- <<INSERT TERM>> EPS growth to $1.28
- <<INSERT TERM>> EPS was up 14% to $1.28
- EPS (<<INSERT TERM>>) for the year was $1.28

For each pair of words, rate how similar you feel the two words are.

Comparable : Organic

Not at all similar Very similar

Adjusted : Organic

Not at all similar Very similar

Non-GAAP : Operating

Not at all similar Very similar

Ongoing : Operating

Not at all similar Very similar

Normalized : Operating

Not at all similar Very similar

Core : Operating

Not at all similar Very similar

The following joke is provided as a break from the task. Word pairs will resume on the following page.

What's Forest Gump's password?

1forest1

Progress update: You have completed 9 of 13 pages of comparisons.

The directions are repeated below for your reference.

Following are several pairs of words that are used to describe earnings per share numbers by firms in 2016 earnings releases. For example, the word might be used in any of the following contexts or more:

- <<INSERT TERM>> EPS growth to $1.28
- <<INSERT TERM>> EPS was up 14% to $1.28
- EPS (<<INSERT TERM>>) for the year was $1.28

For each pair of words, rate how similar you feel the two words are.

Constant currency : Operating

Not at all similar Very similar

Comparable : Operating

Not at all similar Very similar

Adjusted : Operating

Not at all similar Very similar

Ongoing : Non-GAAP

Not at all similar Very similar

Normalized : Non-GAAP

Not at all similar Very similar

Core : Non-GAAP

Not at all similar Very similar

The following joke is provided as a break from the task. Word pairs will resume on the following page.

Why did the crab never share?

Because he’s shellfish

Progress update: You have completed 10 of 13 pages of comparisons.

The directions are repeated below for your reference.

Following are several pairs of words that are used to describe earnings per share numbers by firms in 2016 earnings releases. For example, the word might be used in any of the following contexts or more:

- <<INSERT TERM>> EPS growth to $1.28
- <<INSERT TERM>> EPS was up 14% to $1.28
- EPS (<<INSERT TERM>>) for the year was $1.28

For each pair of words, rate how similar you feel the two words are.

Constant currency : Non-GAAP

Not at all similar Very similar

Comparable : Non-GAAP

Not at all similar Very similar

Adjusted : Non-GAAP

Not at all similar Very similar

Normalized : Ongoing

Not at all similar Very similar

Core : Ongoing

Not at all similar Very similar

Constant currency : Ongoing

Not at all similar Very similar

The following joke is provided as a break from the task. Word pairs will resume on the following page.

How does NASA organize a party?

They planet

Progress update: You have completed 11 of 13 pages of comparisons.

The directions are repeated below for your reference.

Following are several pairs of words that are used to describe earnings per share numbers by firms in 2016 earnings releases. For example, the word might be used in any of the following contexts or more:

- <<INSERT TERM>> EPS growth to $1.28
- <<INSERT TERM>> EPS was up 14% to $1.28
- EPS (<<INSERT TERM>>) for the year was $1.28

For each pair of words, rate how similar you feel the two words are.

Comparable : Ongoing

Not at all similar Very similar

Adjusted : Ongoing

Not at all similar Very similar

Core : Normalized

Not at all similar Very similar

Constant currency : Normalized

Not at all similar Very similar

Comparable : Normalized

Not at all similar Very similar

Adjusted : Normalized

Not at all similar Very similar

The following joke is provided as a break from the task. Word pairs will resume on the following page.

What do Alexander the Great and Winnie the Pooh have in common?

They have the same middle name

Progress update: You have completed 12 of 13 pages of comparisons. This is your last one!

The directions are repeated below for your reference.

Following are several pairs of words that are used to describe earnings per share numbers by firms in 2016 earnings releases. For example, the word might be used in any of the following contexts or more:

- <<INSERT TERM>> EPS growth to $1.28
- <<INSERT TERM>> EPS was up 14% to $1.28
- EPS (<<INSERT TERM>>) for the year was $1.28

For each pair of words, rate how similar you feel the two words are.

Constant currency : Core

Not at all similar Very similar

Comparable : Core

Not at all similar Very similar

Adjusted : Core

Not at all similar Very similar

Comparable : Constant currency

Not at all similar Very similar

Adjusted : Constant currency

Not at all similar Very similar

Adjusted : Comparable

Not at all similar Very similar

You've completed the word comparison task - great work!

Next, you will work on a rating task. On each page you will be given a dimension on which to rate the words used in the comparison task. Consider each word in the same context used in the comparison task when determining your rating.

Note: Loop and merge was used to measure each term along the following dimensions:

- **Negative/Positive**
- **Temporary/Ongoing**
- **Unfamiliar/Familiar**
- **Unreliable/Reliable**
- **Unofficial/Official**
- **Simple/Complex**
- **Unclear/Clear**
- **Opaque/Transparent**
- **Abstract/Concrete**
- **Misleading/Trustworthy**

The midpoint was labeled "Neither --- nor ---". The order of the terms and label endpoints was randomized.

For each word, move the slider to indicate whether the word sounds ${lm://Field/1} or ${lm://Field/3}.

Adjusted

${lm://Field/1} ${lm://Field/2} ${lm://Field/3}

Comparable

${lm://Field/1} ${lm://Field/2} ${lm://Field/3}

1

Constant currency

${lm://Field/1} ${lm://Field/2} ${lm://Field/3}

Core

${lm://Field/1} ${lm://Field/2} ${lm://Field/3}

Normalized

${lm://Field/1} ${lm://Field/2} ${lm://Field/3}

Ongoing

${lm://Field/1} ${lm://Field/2} ${lm://Field/3}

Non-GAAP

${lm://Field/1} ${lm://Field/2} ${lm://Field/3}

Operating

${lm://Field/1} ${lm://Field/2} ${lm://Field/3}

Organic

${lm://Field/1} ${lm://Field/2} ${lm://Field/3}

Pro forma

${lm://Field/1} ${lm://Field/2} ${lm://Field/3}

Recurring

${lm://Field/1} ${lm://Field/2} ${lm://Field/3}

Same-store

${lm://Field/1} ${lm://Field/2} ${lm://Field/3}

	

Underlying

${lm://Field/1} ${lm://Field/2} ${lm://Field/3}

	

You've completed the rating task - you're almost done!

Please answer the following questions to the best of your ability. Do not use resources to look up the correct answer, rather make your best guess for each question.

Which of the following does **not** normally have a credit balance?

- Gain on sale of land
- Investment income
- Unearned revenues
- Rent expense

Note: An "accounting test" was included to determine if perceptions of labels differed with accounting knowledge. No effect of knowledge was found.

Which of the following is **not** one of the primary financial statements?

- Income statement
- Statement of Management Activities
- Balance Sheet
- Statement of Stockholders' Equity

Which of the following would be deducted from revenue to reach net income?

- Wages payable
- Prepaid expenses
- Gross margin
- Cost of goods sold

Which of the following is a liability?

- Inventory
- Cash
- Accounts payable

- ○ Accounts receivable

Which of the following would not be reported on the balance sheet?

- ○ Retained earnings
- ○ Inventory
- ○ Accounts payable
- ○ Cost of goods sold

During 2016, its first year of operations, Redwood Burgers had revenues of $60,000 and expenses of $35,000. The business paid dividends of $20,000. What is the final balance in the retained earnings account at December 31, 2016?

- ○ $0
- ○ $25,000
- ○ $5,000
- ○ $40,000

Which of the following is **not** a section on the statement of cash flows?

- ○ Financing
- ○ Investing
- ○ Managing
- ○ Operating

To help us better understand why your responses may differ from those of other individuals, please answer the following questions:

Please indicate the highest level of education that you have completed.

- ○ High school
- ○ Vocational degree
- ○ Undergraduate degree
- ○ Master's degree
- ○ Doctorate degree

How many years of full-time work experience do you have?

_____

Have you ever worked in the following capacities? If yes, fill in the number of years. If no, leave blank.

- ○ Corporate finance _____
- ○ Corporate accounting _____
- ○ Public accounting _____
- ○ Engineering, operation, or other technical position _____
- ○ Other _____

Have you ever taken classes in the following areas? If yes, fill in the number of classes. If no, leave blank.

- ○ Accounting _____
- ○ Finance _____
- ○ Management _____
- ○ Information Systems _____
- ○ Other business _____

SUPPLEMENTAL ANALYSIS: RECONCILING ITEMS APPROPRIATENESS

Non-GAAP appropriateness Mturk

Thank you for participating in this study. The purpose of the study is to examine how individuals make investment judgments and decisions. Your participation today will take approximately 5 minutes. The information included in the case is not intended to be completely representative of what would normally be available when you evaluate a company. Providing you with that level of detail would require more time to complete the case than could realistically be expected. Please make the best judgments you can based on the information provided in these materials. Upon completion, you will receive a code to enter on the MTurk website for payment purposes.

Page Break

As an investor, you read the following bulletin from the SEC:

Non-GAAP earnings are measures that include or exclude amounts that the most directly comparable number presented under US GAAP (Generally Accepted Accounting Principles) does not.

Non-GAAP earnings can provide useful information about company performance. However, companies have substantial discretion over non-GAAP earnings. In particular:

- There is considerable variation the way non-GAAP earnings are calculated.
- There is considerable variation in the labeling of non-GAAP measures.

Based on this bulletin, which of the following is **true** about non-GAAP earnings? Select all that apply.

- [ ] There is considerable variation in the calculation and labeling of non-GAAP earnings.
- [ ] Manager's have no discretion in the calculation of non-GAAP earnings.
- [ ] Non-GAAP earnings measures deviate from US GAAP (Generally Accepted Accounting Principles).
- [ ] Non-GAAP measures are never useful.

A company is preparing "**core income**", a non-GAAP metric. In arriving at the core income metric, the company considers adding back the following expenses:

Research and development expense

Stock based compensation expense

Amortization expense

Income tax expense

Attention check: What label will the firm use for their non-GAAP income metric?

- "Core" income
- "Operating" income

The following page will ask you about these expenses.

A company is preparing "**core income**", a non-GAAP metric. In arriving at the core income metric, the company considers adding back the following expenses:

Research and development expense

Stock based compensation expense

Amortization expense

Income tax expense

You also compare the amounts of these expense line items to the industry average, and find that they are in line with the industry average.

Attention check: What label will the firm use for their non-GAAP income metric?

- "Core" income
- "Operating" income

The following page will ask you about these expenses.

Note: There were two conditions: one that did not include a statement about the industry average and one that did. This was to test if it was important that the reconciling items not be unusual in their amount. No effect was found, and this statement was dropped in future versions of experimental materials.

Rank each of the expense items the company could add back to GAAP net income when calculating core income from (1) most appropriate to (4) least appropriate by dragging the items into the proper order.

_____ Research and development expense
_____ Stock based compensation expense
_____ Amortization expense
_____ Income tax expense

How appropriate is it for the company to add back **research and development expense** to GAAP net income when calculating core income?

Not at all appropriate Very appropriate

How appropriate is it for the company to add back **stock based compensation expense** to GAAP net income when calculating core income?

Not at all appropriate Very appropriate

How appropriate is it for the company to add back **amortization expense** to GAAP net income when calculating core income?

Not at all appropriate Very appropriate

How appropriate is it for the company to add back **income tax expense** to GAAP net income when calculating core income?

Not at all appropriate Very appropriate

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Vita

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Shannon's research works to understand how preparers and users of financial statements think about accounting concepts, create accounting disclosures, and incorporate accounting information into their judgments and decisions. To date, her work has primarily focused on how non-professional investors acquire, process and integrate accounting information into their investment decisions.

Upon graduating from The University of Texas at Austin, Shannon will serve as the 2020-2021 post-doctoral academic fellow at the Financial Accounting Standards Board (FASB) in Norwalk, Connecticut. Upon completion of this fellowship position, she will be an Assistant Professor at the Joseph M. Katz Graduate School of Business and College of Business Administration at The University of Pittsburgh in Pittsburgh, Pennsylvania. Shannon's email address is shannon.garavaglia@gmail.com. This dissertation was typed by the author.